ISSUE 6 – SPRING 2025

COGS & CAFFEINE

GRAPHIC DESIGN

Second Year Projects
Spotlight Spring 2025

CYNTHIA HANNA – TYPOGRAPHY

TALA KAMBRIS – ALBUM COVER

AYA SAMMAN – POSTER PAMPHLET

FATIMA DARWISH – MOVIE POSTER

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SKY MAALOUF – ALBUM COVER

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EDITORIAL NOTE

As this academic year wraps up, we're filled with appreciation for all that it offered. From lifelong friendships to unforgettable classes, from the spirit of student clubs to moments of discovery and challenge, our journey at MSFEA has been nothing short of transformative. Among the many chapters in this journey, Cogs & Caffeine remains one of the most meaningful—a space that has brought us closer to the values, people, and stories that make MSFEA the faculty it is.

This sixth issue of Cogs & Caffeine was born with a clear intention: to center the magazine on its original identity. We wanted it to become once again a mirror that reflects the essence of MSFEA—not just through achievements, but through the people behind them. It is with this mindset that we focused this sixth issue on people and stories. Stories of students, faculty, alumni, and staff who embody the spirit of perseverance, curiosity, and ambition. Stories that deserve to be remembered, shared, and celebrated.

Throughout this issue, you'll discover content that highlights entrepreneurship, innovation, creativity, solidarity, and the ever-present drive for improvement. These themes aren't just topics, they are the very ethos that MSFEA was built on. Through this magazine, we hope you not only learn something new, but walk away inspired, with a deeper sense of what it means to belong to this faculty, and with insights that help you shape your own roadmap for the years ahead at MSFEA and beyond into your career.

While the past year has been marked by uncertainty and hardship in Lebanon, what remained constant was the determination of the MSFEA community to push forward. We've witnessed students reach notable successes, professors achieve breakthroughs, and countless individuals continue to uplift those around them. This issue of Cogs & Caffeine is a tribute to that unwavering commitment.

We would like to extend our heartfelt gratitude to everyone who made this issue possible—especially Dr. Niveen Abi Ghannam, Director of MSFEA CREATES; Ms. Rima Ghannoum, Director of the MSFEA Marketing & Communications Office; Dr. Imad El Hajj, Associate Dean for Academic Transformation; and Dean Alan Shihadeh—for their continued support and encouragement.

As you go through the pages of this magazine, learn, get inspired, and let this be a reminder that the cornerstone of your experience at MSFEA is the people you meet along the way.

To many more issues to come!

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FOREWORD

Issue 6 of Cogs & Caffeine brings together an eclectic, heartfelt collection of stories that capture the essence of life at MSFEA—told through the lens of students. I'm in awe of the student writers, designers, editors, and editor-in-chief whose hard work made this issue so rich and impactful, especially in a year marked by war, uncertainty, and ongoing pressures on so many fronts.

Perhaps this issue's theme is MSFEA's antifragility: the remarkable spirit that not only endures chaos but also creates beauty through it. From students and athletes to faculty, global ambassadors, community figures, and leaders, this issue tells stories of ingenuity, strength, and hope that define the MSFEA experience. So, grab your caffeine fix and get your brain cogs turning!

Faculty Mentor

Dr. Niveen Abi Ghannam

HISTORY

A TIMELINE OF MSFEA'S LEGACY AT AUB

By Shayene Kamel

1913
AUB launches its first engineering program within the Faculty of Arts and Sciences, offering a BS in Civil Engineering, the first of its kind in English in the region.

1944
The first engineering degree is awarded: a BS in Civil Engineering.

1951
The School of Engineering is formally established under Dr. C. Ken Weidner, offering degrees in Civil, Mechanical, Electrical, and Architectural Engineering. The Bechtel Engineering Building begins construction to support the growing faculty.

1953
Dr. Ken Weidner becomes the first Dean. Under his leadership, facilities and academic offerings expand significantly.

Late 1950s
Women begin to be admitted, marking a turning point in gender inclusivity. The Engineering Show (IDEAS) emerges as a popular student tradition.

1962–1963
Graduate programs in Civil, Mechanical, and Electrical Engineering launch. Sanitary Engineering is also introduced, later renamed Environmental Engineering.

1963
Architecture becomes its own program, leading to the creation of a five-year Bachelor of Architecture (BArch) degree. The faculty is renamed the Faculty of Engineering and Architecture (FEA).

1970s
The Department of Architecture moves to the historic Dar Al-Handasah Building, establishing a creative and academic hub for design education.

1975–1990
Despite the disruptions of the Lebanese Civil War, FEA continues operating and contributes to rebuilding efforts across Lebanon.

1986
The Bachelor of Engineering in Computer and Communications Engineering is introduced, reflecting the rise of computing technologies.

1990
An interdepartmental graduate program in Engineering Management is established to meet the growing demand for technical leadership.

1992
The Graphic Design Program is launched, the first of its kind in Lebanon, expanding the creative scope of the Department of Architecture.

1996
The Department of Architecture is renamed the Department of Architecture and Design (ArD) to encompass its growing range of programs.

1998
Graduate degrees in Urban Planning and Urban Design are reintroduced, contributing to Lebanon's post-war urban development.

2002
Maroun Semaan makes a landmark donation, significantly supporting infrastructure and research. This paves the way for the faculty to later bear his name.

2006
The Graphic Design degree is upgraded to a Bachelor of Fine Arts (BFA). The MUP program is renamed the Master's in Urban Planning and Policy (MUPP) to reflect a more multidisciplinary scope.

2007
PhD programs are introduced in all engineering departments, cementing FEA's role as a research institution.

2008
FEA receives ABET accreditation for Civil, CCE, ECE, and Mechanical Engineering programs. Accreditation is reaffirmed in 2016.

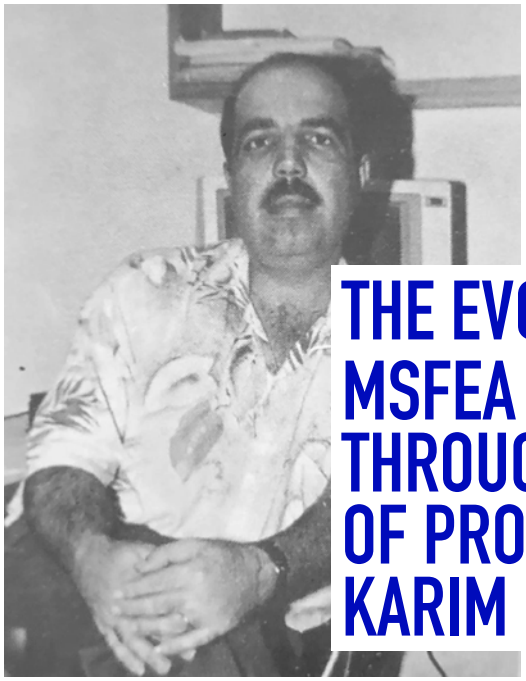
2009
Bachelor degrees in Chemical Engineering and Construction Engineering are launched, widening the faculty's academic portfolio.

2013
The BE and BS in Chemical Engineering receive ABET accreditation, validating the program's academic quality.

2017
The faculty is officially named the Maroun Semaan Faculty of Engineering and Architecture (MSFEA). Dean Alan Shihadeh leads a bold new vision emphasizing innovation, impact, and human well-being.

2022
Renovation of the Dar Al-Handasah Architecture Building is completed, offering state-of-the-art classrooms and studio spaces for design education.

2025
MSFEA stands as a regional leader in engineering and architecture, with over 2,300 undergraduates and a growing global reputation for excellence, research, and community engagement.



THE EVOLUTION OF MSFEA — THROUGH THE EYES OF PROFESSOR KARIM KABALAN

By Mario Khoury

Reading time: Around 5 mins

Today, the Maroun Semaan Faculty of Engineering and Architecture (MSFEA) stands as one of the largest and most dynamic faculties at AUB. But what makes it so special isn't just its buildings or rankings, but rather its people and stories. Few are better positioned to tell that story than Professor Karim Kabalan, one of the faculty's longest-serving members. With a career spanning nearly four decades, Professor Kabalan offers a rich perspective on the faculty's evolution from its modest beginnings to its current standing as a regional leader in engineering and architecture.

A Time of War and Beginnings

After earning his PhD in Electrical and Computer Engineering from Syracuse University at just 22, Dr. Kabalan returned to Lebanon under difficult circumstances. He joined AUB in the summer of 1986, in the midst of the Lebanese civil war.

At that time, the Faculty of Engineering and Architecture was a very different place. It offered only Electrical, Civil, and Mechanical Engineering, along with Architecture. There was no internet, email was hardly used, and several of the buildings that now define the campus—Masri, Oxy, and the top floor of Bechtel—didn't yet exist. A small computing center stood where the Masri building is now. In 1987, the center was shut down, and its students became the first generation of CCE majors.

In its early days, the Electrical and Computer Engineering (ECE) program heavily focused on power systems. The department consisted of only four faculty members: Professor Karim Kabalan, Professor and former Lebanese Prime Minister Hassan Diab, Professor Mounir Yehia, and soon after, Professor Ali El Hajj. With limited staff and resources, professors taught four courses per semester, nearly double today's load. "Classes rarely exceeded 25 students, which fostered a tight-knit environment where faculty and students knew each other well," explains Dr. Kabalan.

Many of those early students would later return to teach at MSFEA, including Professors Louay Bazzi, Ayman Kayssi, and Ali Chehab. Dr. Kabalan fondly remembers one student "the funniest student I ever met at MSFEA." He adds, "There was another student who told a joke before every Control Theory lecture, it became a tradition."

Despite the challenges of war and limited infrastructure, those early years were marked by passion, resilience, and a shared sense of purpose.

Adapting to a Changing World

Since then, MSFEA has grown in size, scope, and ambition. New departments, such as Chemical and Industrial Engineering, were introduced, while others, such as the ECE program evolved alongside rapid technological advances, integrating topics like digital systems, communication theory, and computing.

As students, one of the most important questions we can ask is: "Is our program constantly evolving to be up-to-date?" According to Professor Kabalan, the answer is a reassuring yes: "Every year, we revise the curriculum in line with top U.S. programs," he explains. "We make sure students who want to work abroad won't be missing anything.

"CONTINUOUS IMPROVEMENT IS PART OF OUR DNA."

These revisions have reshaped the way engineering is taught over the years. “Labs once powered by analog computers are now run on industry-standard software like HFSS, allowing students to visualize electromagnetic fields, run simulations, and build real-world solutions,” he explains.

Additionally, MSFEA’s physical footprint evolved dramatically to account for the research and educational expansions. The 2000s saw the opening of the Masri and Oxy buildings, a new floor on Bechtel Hall, and the addition of student spaces, labs, and faculty offices—all to accommodate MSFEA’s growth. “What was once a tiny faculty has now become one of the most dynamic faculties at AUB,” Professor Kabalan reflects.

MSFEA Today: Local Excellence, Global Reputation

With AUB’s ascension to the top 250 universities in global rankings, MSFEA is taking part in this relentless progress.

What sets MSFEA apart, he explains, is the depth and breadth of its undergraduate education. “I’ve taught in the U.S. and here at AUB, and you can tell that, on average, the students here are better prepared. They get exposed to more advanced content earlier.”

From electives in cybersecurity and artificial intelligence to machine learning and digital communication systems, our students have a wide range of high-impact opportunities. MSFEA actively tracks emerging trends and adapts quickly to implement them at AUB, ensuring that our graduates are competitive globally.

“The engineering program at AUB is one of the best,” he affirms.

Additionally, with the growing number of engineering students over the years, MSFEA expanded its support services. “We now have academic advisors, media teams, and student service centers that didn’t exist before.”

What sets us apart is also our strong alumni connections,

“MSFEA ALUMNI CARE,” DR. KABALAN SAYS. “THEY STAY IN TOUCH. THEY’RE PROUD TO SEE HOW FAR THE FACULTY HAS COME.”

More Progress Ahead

For Professor Kabalan, the future lies not just in what students learn—but how they learn. He strongly advocates for project-based, design-oriented senior courses that mirror the real world. “It’s time we move away from pen-and-paper assessments for advanced courses. Let them build things. Let them solve problems,” he says. This vision aligns with that of Engineering Dean Alan Shihadeh, who supports active and experiential learning.

The ECE and CCE departments are currently revising their curricula to embed more design thinking, practical projects, and flexibility to better meet evolving industry demands. Dr. Kabalan acknowledges it won’t be easy, but it is important to keep up with the future of engineering and design education.

Beyond academics, Dr. Kabalan hopes to revive something less tangible yet equally important: a sense of community. He fondly remembers the summer camps that students used to organize between the Summer and Fall semesters. They used to rent a plot of land and live there in tents for a month. While one or two people from MSFEA would join them, “it wasn’t academic, but it built real bonds,” he explains.

His message to today’s students is simple: stay curious. "The most important thing is to be ambitious,” he says.

“THINK DIFFERENTLY. BE CURIOUS. THAT’S WHAT SETS YOU APART IN LIFE.”

After nearly 40 years of shaping minds, programs, and possibilities, Dr. Kabalan remains driven by the same passion that brought him to MSFEA in the first place—a belief that education should empower students not just to succeed, but to lead, to innovate, and to imagine better futures.

ENGINEERING A DEPARTMENT: CELEBRATING 10 YEARS OF INDUSTRIAL ENGINEERING AT AUB

By Elina El Asmar

Reading time: Around 4 mins

In 2010, a bold idea took root at AUB—a proposal to launch an industrial engineering department. It came from Dr. Bacel Maddah and a small group of faculty members from the Engineering Management graduate program. At the time, industrial engineering was gaining global momentum but was still underrepresented in the region. What started as an ambitious idea would eventually redefine AUB's engineering offerings. Today, Dr. Maddah serves as the Chairperson of the Industrial Engineering and Management (IEM) department, helping lead its continued growth.

From Idea to Reality

The proposal spent two years navigating AUB's internal channels before finally getting the green light from the New York State Education Department in 2014—shortly before the start of the academic year. With little time to spare, the program sent out a last-minute call to students in other engineering majors, inviting them to consider switching to the new program. Despite early doubts, 40 students signed up—doubling the initial expectations of onboarding a maximum of 20 students in the first round. These first students became the program's ambassadors. They founded the Institute of Industrial and Systems Engineers (IISE) Student Chapter, promoted the program to new students, and advocated for better internship and career opportunities. Their involvement laid the foundation for the program's continued growth.

An Evolving Curriculum

From the start, the curriculum was designed to evolve.

One of the first major changes came six years ago when students requested more exposure to data science. In response, the program introduced INDE 535, a course on data science and machine learning. This addition sparked a ripple effect across the curriculum, with courses like INDE 302, 303, and 504 incorporating data science elements. The faculty is now exploring the possibility of offering a dedicated data science track for students in other majors.

The program also added technical electives like Project Risk Management, Decision Analysis, and Financial Engineering, making them more accessible to students.

UNLIKE MANY OTHER ENGINEERING PROGRAMS THAT TREAT FINAL-YEAR PROJECTS (FYPS) AS PURELY ACADEMIC EXERCISES, AUB'S INDE PROGRAM EMPHASIZES WORKING WITH THE INDUSTRY ON REAL-WORLD CHALLENGES.

This practical approach continues to distinguish the program today.

Another key curriculum change was moving courses like INDE 504, 535, and 513 earlier in the program, ensuring students have a strong foundation in data science, statistics, and simulation before getting to their internships and FYPs. Another standout change is the recent addition of the Entrepreneurial Finance for Engineers course (ENMG 698O), taught by Dr. Jacques Abboud, which has added depth to the entrepreneurship dimension of industrial engineering, offering students insights into real-world financial decision-making.

Faculty at the Forefront of Industrial Engineering Research

Teaching is only one part of the mission of the INDE department. Faculty members are also leading a diverse range of research initiatives that address real-world challenges in energy systems, healthcare, machine learning, construction, and retail. Many of those efforts are in collaboration with international institutions and are supported by major grants.

Below are a few examples of the department's ongoing research—projects that continue to evolve in response to both regional needs and global trends.

In the area of energy and sustainability, Dr. Majd Olleik is working on integrating renewable energy into Lebanon's diesel-reliant grid. His project, funded by the Templeton Foundation and developed with teams from Vienna and Canada, uses real data from southern Lebanon and the Matn area to propose scalable alternatives for the country's energy future.

In the construction sector, Dr. Hicham Abou Ibrahim is applying digital twin technology to enhance building design, adapting smart modeling tools from manufacturing to the built environment.

Meanwhile, in healthcare and wearable technology, Dr. Karim Zahed is leading a vertically integrated project that uses

FITBIT DATA TO PREDICT THE ONSET OF PANIC ATTACKS BY IDENTIFYING EARLY PHYSIOLOGICAL SIGNALS.

Research in artificial intelligence is also gaining momentum. Dr. Maher Noueihed, in collaboration with colleagues from Texas A&M and the University of Michigan, is developing algorithms that aim to make machine learning models more efficient and equitable, particularly at the intersection of AI and optimization theory.

Consumer behavior is another active area of study. Dr. Bacel Maddah is using spatial demand models and non-linear regression to investigate how retail store layouts influence shopper decisions. His work, tested in stores across Beirut, has shown that thoughtful shelf placement can increase profitability by up to 40% while improving customer experience and supporting public health.

Looking Back, Looking Ahead

Over the past decade, AUB's INDE program has evolved from a modest proposal into a robust, dynamic academic unit. While many have played a role in this evolution, Dr. Maddah's vision and leadership have been pivotal to its success, alongside the contributions of students and faculty who continue to shape the future of industrial engineering in the region.

INITIATIVES AND EVENTS

FROM CAMPUS TO THE WORLD: ASCE AND ASME REVIVE AUB'S SIGNATURE STUDENT TRIPS

By Clara Samaha

Reading time: Around 5 mins

After a long pause, one of MSFEA's most beloved student traditions is back. Over the past year, the American Society of Civil Engineers (ASCE) and the American Society of Mechanical Engineers (ASME) brought back their signature international trips — blending cultural exploration, hands-on learning, and community service. From Germany to Sri Lanka, students reconnected with each other and the world in unforgettable ways.

In this article, we hear directly from the students behind the revival — Christy Slim from ASME and Cindy Slim and Roy Jabbour from ASCE — in a Q&A about what it took to bring these experiences to life.

ASME Trip to Germany and the Czech Republic – Interview with Christy Slim

How did you prepare for the trip? What were the preparations like?

We started by planning every detail, from accommodation to visits and transportation. We also had to make sure everything stayed on budget and fit within the timeframe we had. It was a lot of coordination, but it paid off.

What was the highlight of the trip for you?

Definitely the Mercedes-Benz factory museum tour. The guide was amazing, and it felt like a real achievement to get over 40 AUB students into such an iconic place in the automotive world.

Can you share a memorable interaction you had during the trip?

It was nice to see how friendly and welcoming the locals were. We had expected people to be distant or cold, but they were actually very open and kind to tourists.

What was one cultural shock you experienced that you didn't expect?

One funny thing was that we had to pay to use the bathroom in public spaces. In one place, the restroom was inside a bar, and we had to buy a drink just to get access!

In what ways do you think this trip brought everyone closer together?

We were sharing a unique experience in a new place. We spent a lot of time together, and even interacting with the local community helped us grow closer as a team.

What was the biggest challenge you faced while planning or during the trip, and how did you overcome it?

Managing a large group and keeping everything on track wasn't easy. But with good communication and clear planning, we made it work.

How do you think this experience changed your perspective on volunteering or travel?

It pushed me out of my comfort zone. I didn't know most of the group beforehand, but by the end of the trip, I felt really connected. It showed me that great travel experiences don't require traveling only with people you already know.

Was there a moment when you felt particularly proud of what you and your team accomplished?

Yes. First, during the factory tour, realizing how far we'd come in organizing it. And second, at the end of the trip, seeing everyone so happy and knowing we have created something they'll always remember.

If you had to plan this trip again, what would you do differently?

I'd make it a bit longer—one week wasn't enough! I'd also add more group activities to help everyone bond even more.

What is one lesson you learned from this trip that you will carry with you moving forward?

If you really want something and work hard for it, it can happen. And also, enjoy every moment—these experiences don't come around often.

If someone is considering going on a similar trip, what advice would you give them?

Don't hesitate. Just go.

YOU WON'T ALWAYS HAVE THESE CHANCES, AND YOU WON'T BE A STUDENT FOREVER. TAKE THE LEAP!

ASCE Trip to Sri Lanka

Interview with Cindy Slim and Roy Jabbour

How did you prepare for the trip? What were the preparations like?

We contacted many agencies to compare offers and customize the program for a large group. We also had to make sure the agency was reliable to avoid any surprises once we got there.

What was the highlight of the trip for you?

Seeing everyone together at the airport. After years without these trips, it felt amazing to bring them back and be part of something that meaningful.

Can you share a memorable interaction you had during the trip?

The volunteering days were the most memorable. At the school, the kids were full of energy—we danced, laughed, and had so much fun. At the orphanage, we spent some time with the kids played football and had some fun. Their gratitude was really moving.

What was one cultural shock you experienced that you didn't expect?

It wasn't a huge shock, but we were surprised by how friendly and generous the Sri Lankans were. Also, seeing elephants casually walking around was something we definitely didn't expect!

In what ways do you think this trip brought everyone closer together?

At first, people didn't know each other well. But after the trip, many became friends. This is especially true for first-year and second-year students. We bonded over this beautiful experience and the moments we shared together.

What was the main focus of the trip?

We spent two days volunteering and the rest of the trip exploring and enjoying the country.

What was the biggest challenge you faced while planning or during the trip, and how did you overcome it?

One major challenge was starting from scratch—we didn't have guidance from previous organizers. We had to figure out everything: answering questions, collecting payments, choosing the agency, and handling visas. During the trip, we worked hard to keep things running smoothly, making sure people were on time and managing last-minute changes.

How do you think this experience changed your perspective on volunteering or travel?

It showed us how rewarding and fun a well-planned trip can be. We learnt how nice it is to mix volunteering and tourism together, and traveling with friends from university makes it even more special.

Was there a moment when you felt particularly proud of what you and your team accomplished?

Yes, when we saw the children's smiles and gratitude. It felt like we truly made a difference. Also, seeing how happy the group was at the end made all the effort worth it.

What is one lesson you learned from this trip that you will carry with you moving forward?

STEP OUTSIDE YOUR COMFORT ZONE. UNIVERSITY IS THE TIME TO EXPLORE, MEET NEW PEOPLE, AND VISIT PLACES YOU MIGHT NOT GO TO LATER IN LIFE. YOU GROW SO MUCH FROM EXPERIENCES LIKE THESE.

If someone is considering going on a similar trip, what advice would you give them?

Enjoy every moment! These opportunities don't come often. Visiting a place like Sri Lanka was something we'd never thought we'd do, and it was absolutely worth it.

THE 2025 AUB RALLY PAPER: CONTINUING A TRADITION OF CHAOS, CLUES, AND CAUSES

By Yara Al Soloh

Reading time: Around 2 mins

It starts with whispers. A cryptic Instagram post. A team sprinting across campus. Then, a spark — that unmistakable Rally Paper energy sweeps through AUB. Every April, this high-energy, student-run tradition takes over AUB, turning the campus (and much of Lebanon) into a giant board game. Over two intense days, students race against the clock — and against each other — to complete challenges that are equal parts ridiculous, clever, and surprisingly meaningful. But the Rally Paper isn't just about the fun. Each team plays for a cause, partnering with a local NGO to raise awareness and funds — all while having the time of their lives.

This year, five groups — each representing a faculty or academic year — took on the challenge. With a mix of ambition and adrenaline, they dove headfirst into a weekend of puzzles, scavenger hunts, road trips, and unexpected twists.

From solving binary codes and racing in treasure hunts to throwing fictional gender reveal parties and filming TikToks with government ministers, nothing was off-limits. One team found themselves in Batroun at sunset. Hours later, that same team was battling snow in Faraya under the stars. Just another Rally weekend.

> "WHILE THE WEEKEND MIGHT STEAL THE SPOTLIGHT, IT'S THE MONTHS OF BEHIND-THE-SCENES WORK THAT MAKE IT POSSIBLE."

A small team of student organizers — Elia Semaan, Edmond Abi Abdallah, and Khalil Fayad — spent nearly three months designing the experience from the ground up. The organizers planned every detail, mapping routes, crafting challenges, managing logistics, and seeking the support of local sponsors.

Once the Rally kicked off, campus life shifted into high gear. Teams ran from one location to the next, decoding clues, checking their phones for new instructions, and collaborating under pressure. Some moments were bizarre. Others were hilarious. And a few even got a little emotional.

"Sure, we wanted to win," said one team member. "But really, we just wanted to see our charity get something out of it. That kept us going — even through the toughest tasks."

Team "Telte Sebte," the E3 students, walked away triumphant, giving their awarded $10,000 to Lebanese Red Cross Gemmayze. Not everyone walked away with a trophy — but that's never been the point. The Rally Paper leaves its mark in other ways: the friendships, the late-night laughs, the sense of doing something that matters.

More than just a student activity, the Rally Paper is a reminder of what's possible when passion, purpose, and a bit of chaos come together. It's become a defining tradition at AUB — and one that students are already counting down to next year.

BEIRUT 2030: STUDENTS REIMAGINING THE CITY'S FUTURE

By Yara Al Soloh
Reading time: Around 3 mins

What will Beirut look like in five years? For a group of AUB students, that question isn't just hypothetical — it's a call to action.

Beirut 2030 is a student-led initiative launched by the Engineering Student Society to reimagine the future of a city long marked by crisis. Drawing inspiration from large-scale transformation projects like Saudi Vision 2030, this initiative puts students at the center of change — not just as participants, but as the driving force behind ideas that aim to make Beirut more sustainable, equitable, innovative, and livable.

Aiming to shape a better future for the city, Beirut 2030 empowers students from diverse academic backgrounds to take the lead in reviving a city that has long struggled with economic, political, and humanitarian challenges.

THIS INITIATIVE ENVISIONS A FUTURE WHERE STUDENTS PLAY AN ACTIVE ROLE IN RESHAPING THE CITY, PROVING THEIR ABILITY TO DRIVE MEANINGFUL CHANGE.

Key Projects of Beirut 2030

Currently, Beirut 2030 includes five interdisciplinary projects—each one addressing a different issue, from energy and health to education and the environment. These projects are:

- **Solar Illumination Initiative** proposes installing solar-powered lights or a more sustainable alternative for street lighting along Manara's pedestrian sidewalks to enhance nighttime safety and reduce energy costs.
- **Education for Sustainability** aims to integrate environmental awareness and daily sustainable practices as a core principle in school curricula.
- **Urban Green Revival** focuses on expanding access to green spaces, particularly in public schools, where concrete outdoor spaces are transformed into a self-sustaining green area.
- **Innovative Health Solutions** explores tools for the early detection of heart attack vulnerabilities.
- **Nahr Beirut Restoration** proposes introducing filtration systems to clean the Beirut River.

Students as Changemakers

At the heart of Beirut 2030 is an interdisciplinary, collaborative spirit. While the initiative began with engineering students, it quickly opened up to students across campus — from economics to education — recognizing that solving Beirut's challenges requires diverse perspectives and skill sets.

It's not just about ideas. These students are conducting research, building prototypes, pitching their concepts to NGOs and ministries, and learning to navigate the realities of policymaking, infrastructure, and urban design.

Each team is tackling their project in two phases. The first is about research and exploration — diving into literature reviews, case studies, and stakeholder interviews. The second focuses on design, testing, and preparing a pitch, which will be shared in a public showcase for faculty, students, and partner organizations.

Built to Last

One of the most thoughtful elements of Beirut 2030 is how it's built for continuity. The initiative is designed to outlast any single class or cohort. At the end of each academic year, a new team takes over, building on the work of the previous group. From design sketches and technical documents to email correspondence and research notes, everything is documented and passed along — keeping momentum alive, one year at a time.

FOR MANY STUDENTS, BEIRUT 2030 OFFERS MORE THAN HANDS-ON EXPERIENCE — IT PROVIDES HOPE.

In a time when the future can feel overwhelming, this initiative gives students a way to take ownership of the city's trajectory. It's not just about dreaming big; it's about putting those dreams into motion, step by step.

DESIGNING WITH PURPOSE: HOW PROFESSOR CARLA ARAMOUNY IS RESHAPING AUB, ONE STUDENT SPACE AT A TIME

By Clara Samaha

Reading time: Around 3 mins

On any given day at AUB, you'll find students spread out across campus — laptops open in sunny corners, conversations bubbling over benches, moments of calm nested in green spaces. But few pause to think about who designs the spaces that shape those moments. Professor Carla Aramouny does. And for her, space is the story. As an Associate Professor of Architecture and Associate Dean in AUB's Office of Student Affairs, Professor Aramouny has become one of the campus's most influential designers through subtle, student-centered interventions across campus that put well-being, creativity, and collaboration first.

Who is Professor Carla Aramouny?

Professor Carla Aramouny is an Associate Professor of Architecture at the School of Architecture and Design at AUB, as well as Associate Dean of Student Affairs. Her teaching and research focus on architecture and the expanded environment, with a strong emphasis on hybrid design, ecology, and infrastructure. A significant part of her work revolves around creating student-centered spaces to enhance student experience for more collaboration, comfort, and well-being on campus.

She founded the ARD TechLab and played a key role in the development of Bechtel Design Hall (BDH) — a space now beloved by students for its light, openness, and flexibility. She also worked as faculty supervisor on the renovation of the Architecture and Design building and the development of its studio spaces and facilities. Her work bridges theory and practice, using applied research to turn design ideas into innovative spaces students can enjoy and benefit from.

Installing Empathy in Architecture

Professor Aramouny's journey into student-centered design didn't begin in academia.

Earlier in her career, she worked in several renowned architecture offices, and developed projects that bridge architecture design and contextual understanding, with material know-how and spatial layouts that affect how people experience and use space. That hands-on experience shaped her approach today, especially as she put an emphasis on spatial well-being, flow, and how space supports its users. The insights she gained from practice now influence her university design work — particularly when it comes to making campus spaces more engaging and human-focused.

Her approach has always been grounded in research, collaboration, and empathy — combining academic rigor with real-world insight to improve how students live, work, and connect on campus.

Professor Aramouny doesn't only design for students, she designs with students. For instance, she is actively involved in the Vertically Integrated Project (VIP) Grant, which is an interdisciplinary, long-term research initiative focused on rethinking AUB's shared spaces. The VIP project "Augmenting Space" is led by Professor Aramouny and her team. From research and concept to execution, it focuses on improving student experience through smarter and more thoughtful space design interventions that enhance wellbeing, creativity, productivity, and accessibility. Under her guidance, students from architecture, urban design, graphic design, engineering, and psychology worked together throughout the process, each bringing their different competencies to the table. Their findings are grounded in five core pillars: Well-being and Health, Inclusivity, Collaboration and Creativity, Productivity, and Smart Environments. Together, these pillars will serve as a compass for future interventions — both large and small — across campus.

These pillars guide the design and implementation strategies of the project. The research involves literature review and case study analysis looking at relationships between these five pillars and architectural and visual design. It is also about assessing AUB campus spaces, particularly areas that can support students for these extra-curricular needs for study and recreation.

Campus Spaces, Reimagined

Currently, two major student space transformations are moving from vision to reality: SPILL Outdoor café seating and Charles Hostler Student Center Outdoors seating — both identified through campus analysis, student surveys and data gathered on how students use space.

At SPILL outdoor café, the goal is to transform an underused area into a vibrant, functional outdoor lounge, both for studying and relaxing. The design addresses critical needs for shading and adaptable furniture, including benches, tables, and power sockets for charging laptops and phones. Trees will be planted to provide shade during the sunny days, and efficient lighting will be enhanced for nighttime use, making the most out of the space around the clock. Graphic elements are also part of the design, to give the space more character and create a livelier atmosphere. It's all about making Spill a place where students can stay longer, feel safe, and enjoy their time outdoors.

Hostler Center, meanwhile, taps into something different: making the most of an existing outdoor area by adding modular seating connected to current benches to transform it into a more social spot. The project also aims at promoting sports and a healthier lifestyle. Modular seating and informal outdoor workout zones meet open-air zones for stretching, yoga, or just catching your breath. There are also ideas for yoga-friendly areas and open spaces in the existing lush garden that invite movement and casual hangouts. A healthy drinks kiosk adds a final touch, making it easier for students to make healthier choices. It's about wellness without the pressure — spaces that nudge students toward healthier choices, effortlessly. The goal is to encourage activity, wellness, and casual gathering for students across campus, all in one spot.

In summary, Professor Aramouny's work blends research, design, and student engagement to bring meaningful change to the AUB campus. With Spill and Hostler Center ready to come to life, her vision for healthier, more welcoming student spaces is about to take its most tangible form yet.

Student Collaboration and Future Plans

Looking ahead, the next project on the list is re-envisioning Jafet Library's study areas. Interested in joining the next design team? There are opportunities to get involved at every stage, from early research to final implementation. Furthermore, Professor Aramouny is inviting students from all disciplines — architecture, psychology, engineering, design, and beyond — to be part of the transformation. Just send her a note at ca38@aub.edu.lb.

Project Credits

Hostler Center (Architecture):

Carl Youssef
Sarah Saayfan
Yara Mneimneh
Najwa Hasbini
Fadil Al Hakim
Kinda Bou Reslan

Hostler Center (Graphics):

Alaa Ayyad
Fatima El Salhani
Lynne El Orfali

Spill (Architecture):

Sharren Mhanna
Najwa Hasbini
Carl Youssef
Reem Ibrahim El Husseini

Spill (Graphics):

Alaa Ayyad

Augmenting Space Research:

Dina Arnous
Sarah Saayfan
Yara Zgheib
Alaa Ayyad
Ali Yaakoub
Sarah Abdallah
Larissa Ismail
Sergio Zgheib
Hamda Mohamed

Charles Hostler Student Center – Before

Charles Hostler Student Center – After

SPILL Outdoor – Before

SPILL Outdoor – After

WORLDWIDE

HOW A CROSS-FACULTY PARTNERSHIP IS LEADING INNOVATION IN AI, HEALTH, AND HUMANITARIAN ENGINEERING

By Shayene Kamel

Reading time: Around 3 mins

In 2017, a collaboration between two AUB faculty members—Dr. Imad El Hajj from the Maroun Semaan Faculty of Engineering and Architecture (MSFEA) and Mrs. Aline Germani from the Faculty of Health Sciences (FHS)—sparked a new idea: what if engineers and public health experts could collaborate to tackle some of the region's most pressing humanitarian challenges?

That idea grew into the Humanitarian Engineering Initiative, a cross-disciplinary effort that combines engineering, public health, and community engagement to design practical solutions for real-world problems. Today, that partnership is reshaping how AUB engages with global issues—and how MSFEA contributes to them.

BUILDING BRIDGES BETWEEN DISCIPLINES

Humanitarian engineering is not a new concept, but at AUB, its approach is distinctive. It applies engineering solutions to humanitarian crises and social justice challenges through cross-sector collaboration—with experts in public health, agriculture, environmental sustainability, and beyond.

“At the heart of our model is not working in silos,” says Mrs. Germani. “We bring together engineers, public health experts, social scientists, and even environmental specialists to create solutions that actually work on the ground.”

This collaborative model has allowed the team to respond flexibly to complex challenges—whether it’s a public health crisis, natural disaster, or infrastructure breakdown. Rather than developing isolated tools, the initiative focuses on integrated systems that can scale and adapt to changing needs.

> “IN LATE 2023, THE TEAM LAUNCHED ITS MOST AMBITIOUS PROJECT TO DATE: AIGENCY—SHORT FOR BUILDING THE AGENCY OF COMMUNITIES. THE GOAL IS TO USE ARTIFICIAL INTELLIGENCE TO SUPPORT LOCAL, COMMUNITY-LED RESPONSES TO CRISES.”

Unlike traditional top-down approaches, AIGENCY aims to shift decision-making power closer to those affected by building tools that communities can use themselves to anticipate risks, manage emergencies, and recover effectively from crises like natural disasters, pandemics, or infrastructure breakdowns.

Earlier this year, the project won a €2.5 million grant from the European Union’s INTERREG Next Med program, an EU funding mechanism supporting cooperation between Mediterranean countries for innovation, development, and resilience. The project brings together a diverse group of partners from Italy, Spain, Turkey, and Palestine, with AUB as the lead institution.

AIGENCY’s core team at AUB includes:

- Dr. Imad El Hajj, Professor at MSFEA
- Mrs. Aline Germani, Director of CPHP at FHS
- Dr. Daniel Asmar, Associate Professor at MSFEA
- Celine Abou Nader, Research Associate
- Michelle Kawak, Research Assistant
- Lianne Ceelen, Project Coordinator

THE ROAD TO A MULTI-MILLION EURO GRANT

Securing a multi-million Euro grant requires more than a good idea. From identifying Mediterranean-wide challenges to drafting and coordinating dozens of documents, the process was both strategic and highly detailed.

“We start by identifying common challenges in the Mediterranean,” says Mrs. Germani. “Then we bring together partners who can complement each other’s strengths.”

From there, it’s a cycle of drafting, refining, testing ideas, and managing hundreds of administrative details. “We had tens of Excel sheets tracking every task, every submission, every missing document,” Dr. El Hajj adds. “This level of coordination is crucial.”

The process is not only about engineering solutions, it's about understanding communities, building the right partnerships, and delivering a plan that’s scalable and sustainable.

EXPANDING MSFEA'S INTERNATIONAL ROLE

"AIGENCY IS ONE OF SEVERAL RECENT PROJECTS POSITIONING MSFEA AS A GLOBAL RESEARCH LEADER."

"These kinds of partnerships show the world what MSFEA is capable," says Dr. El Hajj. "We used to approach international partners; now they approach us."

With growing recognition from European institutions, MSFEA is now leading major consortia—something that was less common just a decade ago. AUB's role as a lead partner is expanding, bringing new collaborations, visibility, and impact.

Not long ago, AUB was often seen as a regional participant in the global research space. That perception is changing.

In the most recent EU call for proposals, AUB secured leadership roles in two funded projects. Besides AIGENCY, Professor Shadi Najjar from the Department of Civil and Environmental Engineering secured another grant to harvest solar power to use in heating.

"As a university, we're showing that even under tough circumstances, we can lead on par with the best institutions in Europe," says Dr. El Hajj.

"WE'RE NO LONGER THE UNDERDOGS."

DR. NASSIM NICHOLAS TALEB BRINGS HIS WORLDWIDE EXPERTISE ON RISK AND UNCERTAINTY TO MSFEA

By Elina El Asmar and Rhea Abdelhay

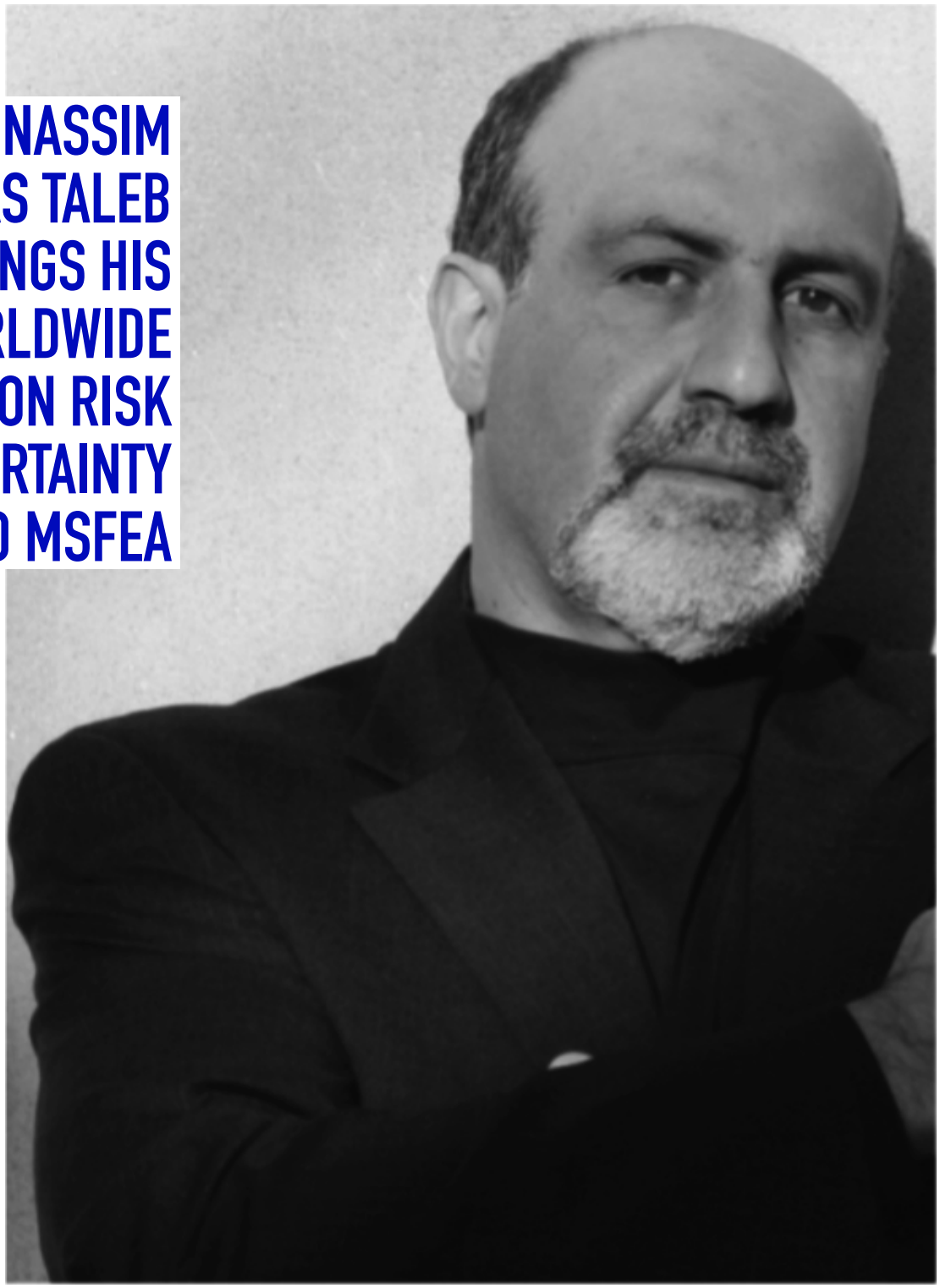
Reading time: Around 4 mins

You've probably heard his name in class, seen his books on shelves, or caught one of his sharp-tongued interviews online. Nassim Nicholas Taleb—global thinker, bestselling author, and unapologetic disruptor—has made waves around the world. But now, he's turning his focus toward home.

Last year, Taleb made a bold move: returning to Lebanon part-time and joining the Maroun Semaan Faculty of Engineering and Architecture (MSFEA) at AUB.

Not for prestige. Not for the title. But for the people. "Everybody's bright at AUB," he says. "It's like a jewel. I just want to help it grow."

We sat down with Dr. Taleb to ask about what drew him back, what he sees in MSFEA's future, and what advice he has for students preparing to navigate an unpredictable world.



A Nontraditional Path beyond Traditional Academia

Taleb didn't grow up fascinated by numbers or formulas. "I wasn't interested in mathematics largely because I disliked arithmetic," he said. "I started loving mathematics when I saw trading as a direct application." His journey into mathematics and probability began formally at 26—long after most traditional academics. He earned his Ph.D. after 12 years of working in trading and became an academic 10 years later. But it was this nonlinear path that shaped his revolutionary style.

"ALL MY REAL EDUCATION BEGAN AFTER I GRADUATED," HE SAYS

Taleb went on to become one of the most influential thinkers in the world, known for his work on uncertainty, risk, and randomness. His groundbreaking book The Black Swan (2007) revolutionized the way we think about rare and unpredictable events and their massive impact. In Antifragile (2012), Taleb expanded his ideas, proposing that some things benefit from disorder and chaos—offering a paradigm shift in how we view systems, markets, and life itself. Other notable works like Fooled by Randomness (2001) and Skin in the Game (2018) solidified his reputation as a leader in the domains of risk management, decision-making, and economics.

Why MSFEA? Why Now?

When Taleb decided to join MSFEA as an honorary scholar, it wasn't for another title or status, it was a testament for his deep appreciation for the quality of minds at AUB. "Everybody's bright at AUB. It's like a jewel. I just want to help it grow." Currently, he is designing a course for Fall 2025 on fat tails—a central concept in his work on risk and uncertainty, which suggests that rare, extreme events occur more frequently than what we might expect based on standard models like the normal (bell curve) distribution. He is also collaborating with Professors Bacel Maddah, Jihad Fahs, and Ibrahim Abou Faycal on research papers.

His course is one of a kind—you won't find it offered anywhere else in the world. "There's more freedom of speech in Lebanon in some ways than in the West," Taleb states. "Students here have diverse worldviews."

Despite saying his ideas were not directly shaped by Lebanon, Taleb acknowledges something deeper. "The Lebanese culture instilled in me the respect for books and knowledge," he says. Even more, the Civil War gave him a nuanced understanding of identity, paranoia, and fragility—concepts that echo in his most famous works.

For Taleb, AUB isn't just an institution: it's a stage for transformation. "The students here are sharp," he says.

"I WANT TO ENCOURAGE PEOPLE TO COME STUDY HERE. THE ACTION WILL BE IN THE EAST AND WE ARE AT THE GATES."

Beyond the Classroom: Taleb's Message to MSFEA students

When asked what advice he has for students, Taleb says: "Go into the real world. Contribute to Lebanon by starting a business, not by seeking non-profit actions."

"LOCAL GREED SCALES INTO VIRTUE, NOT THE REVERSE."

He adds, "Read as much as you can. Don't think that your education is going to directly help you with things that are practical. The real world is where you learn to apply what you've read and think critically about it."

Taleb encourages us students to learn what endures: "Know the classical languages and focus on mathematical techniques; they'll stay with you forever. Waste no time learning things that are transitory." He urges MSFEA students to think ahead—not just to the next job, but to the next global era.

In a world obsessed with predicting the future, Taleb offers tools for surprising its surprises. And now, at MSFEA, he's planting something that is built to last.

ENTREPRENEURSHIP

THREE FRIENDS, A FINAL YEAR PROJECT, AND A STARTUP

By Chelsea Saydi

Reading time: Around 4 mins

"IT WAS JUST AN IDEA. NO PRODUCT. NO PROTOTYPE. JUST A DECK."

But for Hekmat, Karim, and Jad, three childhood friends turned co-founders, that was enough. Enough to turn down job offers, enough to pause everything else, and enough to go all in on what would become Chimera, one of the first real startups to emerge from AUB's Maroun Semaan Faculty of Engineering and Architecture.

Today, Chimera operates from a small office in the Irani Oxy Engineering Complex, but its ambitions stretch far beyond campus walls. At its core, Chimera is a cybersecurity solution built specifically for small and medium-sized businesses. But more than that, it's a story about what happens when students decide to stop waiting for the right time and just do.

From Friends to Founders

Karim, Jad, and Hekmat have known each other for over a decade. They grew up together, went to school together, and ended up in the same Computer Science and Engineering (CSE) program at AUB. By senior year, working together on their Final Year Project (FYP) felt obvious.

Unlike most students who approach the FYP as a final academic checkpoint, the trio had other plans."We knew our project had potential," Jad said. "But after applying to the Accelerator Program, winning it, and receiving funding, we realized this might be much bigger than we thought."

There was no MVP (minimum viable product) at the time, just an idea and a pitch deck. To outsiders, their decision to reject job offers and go full-time on Chimera might've seemed risky. But to them, it was clear. "It was an obvious choice. We have the luxury of time, no real responsibilities yet, and immense support and funding. This was our window," says Hekmat.

Why Chimera?

While enrolled in their CSE program, the team identified both a technical and market gap: despite being an essential matter, available cybersecurity solutions were a nightmare to work with. Most solutions on the market were built for large enterprises with high price tags and complicated interfaces, leaving small and medium-sized businesses vulnerable to cybersecurity attacks.

Meanwhile, the team found some staggering statistics: almost 90% of companies are Small and Medium-sized Enterprises (SMEs). Nearly half of cyberattacks target SMEs, and over 60% of those affected go out of business within six months.

So, they asked: what if cybersecurity didn't feel like cybersecurity? What if it was intuitive, affordable, and even friendly?

And Chimera was born.

The team designed Chimera as a small hardware device that connects to a company's router, monitoring and protecting the devices on the network, along with a complementary user-friendly app that allows anyone to manage security in real time.

> "CYBERSECURITY THAT SPEAKS YOUR LANGUAGE" BECAME MORE THAN JUST A SLOGAN. IT BECAME THEIR ENTIRE ETHOS.

Behind the Product

It took six to eight months of research and development to get Chimera to where it is now. And that number, they admit, can be discouraging. "You don't see the light at the end of the tunnel for a long time." says Karim.

The product went through multiple pivots; what Chimera started as is now only a small feature of what it has become. And everything was shaped by talking to users.

"User input is everything," Hekmat mentioned. Even their business model was inspired by real-world feedback. They noticed that SMEs are especially price sensitive, and they often avoid solutions with high upfront costs. In response, the team adopted a subscription-based model to ease the financial burden on small businesses and make their product more accessible.

Momentum continues to build. The team recently represented Chimera at the Qatar Web Summit, gaining international interest and opening doors to new collaborations. Back home, a promising lead has emerged: travel agencies in Lebanon are now required to meet IATA cybersecurity standards, and Chimera was contacted directly by the board. Soon, they might become the sector's go-to provider.

"Once you go startup, you never go back," Karim said. "Whether we fail or succeed, it's the same. We chose this."

The Chimera team continues to grow, welcoming Edmond, a senior Industrial Engineering student at AUB, as Business Strategy Manager. "In a startup, your work has impact," he said. "In big companies, there's a hierarchy. You're a small part of a big machine. Here, we build."

What Comes Next

Chimera is now focused on setting up infrastructure, onboarding more early users, and preparing a larger-scale launch.

Still, the founders remain grounded. "We hope Chimera becomes a fair player in the regional and U.S. markets." But even more than that, they want to inspire others at AUB to do the same.

What Chimera shows is that you don't need to wait to build something that matters. At MSFEA, the support is there—the mentors, the community, the funding. What's often missing is the belief. The kind that turns a class project into a real startup. And that's what they want to change. If you're a student with an idea, a side project, or even just a spark—they want to hear from you. Because the next big thing at MSFEA doesn't have to come from somewhere else. It can come from you.

THE JOURNEY OF DR. ISAM KAYSI BETWEEN WHITEBOARDS AND BOARDROOMS

By Elina El Asmar
and Rhea Abdelhay

Reading time: Around 4 mins

Dr. Isam Kaysi's career at the American University of Beirut (AUB) spans decades and dimensions. After joining the Department of Civil and Environmental Engineering in 1992, he quickly advanced through the academic ranks, earning his full professorship in 2002. By 2006, he had also taken on the role of department chair — a position that brought with it administrative responsibility on top of teaching and research. His impact extended beyond campus walls as he served as an advisor to four different Lebanese ministers of transportation, bringing his academic background in transportation planning into national policy conversations. Since 2016, Dr. Kaysi has transitioned to a part-time role at AUB while based abroad, though he remains connected and is likely to resume teaching again in the coming year. His academic contributions have been substantial — from his editorial work to a distinguished record of publications. His unique path demonstrates that academia, industry, and public policy are interconnected and can mutually reinforce each other.

Founding SETS and Mindsets

The idea of staying solely within academia, Dr. Kaysi admits, was not fulfilling. After becoming a full professor, he experienced what he describes as a turning point: a need to do more, to grow beyond the familiar environment of teaching and research. A brief period teaching at the University of Toronto reaffirmed this, highlighting only marginal differences in academic culture abroad. In 2004, he returned to Lebanon determined to create something new.

What had started as informal consulting work soon became institutionalized through the founding of SETS — a professional engineering and planning consultancy co-established with a former Dar Al-Handasah director, Fadi Darwish. In 2005, the company was shaken by the assassination of Rafic Hariri, but it managed to stay afloat. Over the next decade, SETS expanded steadily across the region, opening operations in KSA by 2009 and Cairo by 2015. Today, it stands as one of the top 120 international design firms, operating in 20 countries.

In 2016, with SETS on stable footing, a former student, Dr. Rayan Khraibani, approached Dr. Kaysi with a new idea. The result was Mindsets, a boutique management consulting firm that has since expanded into venture building and development. In fact, what makes Mindsets and SETS particularly meaningful to Dr. Kaysi is the fact that many of their partners and contributors are former students. Watching his students' education evolve into professional collaborations has been a source of both pride and purpose. Today, a second generation of partners is beginning to take over, ensuring sustainability and growth.

Dr. Kaysi has since stepped back from the day-to-day operations of SETS, focusing instead on board-level strategy and improved governance. The decision was deliberate — a transition that allows him to stay involved without the full-time intensity that defined the earlier years.

A Broader Footprint: Investing in the Local Ecosystem

Beyond his own ventures, Dr. Kaysi has also contributed to Lebanon's startup ecosystem as an investor and advisor. One of his earliest investments was in Wakilni, a logistics and delivery platform that has steadily grown and diversified its offerings. The company has expanded into Jordan, launched Yellow Stores (a warehousing solution), and developed a marketplace platform. His role on the board has helped guide that growth while further connecting him to evolving business models in the region.

The Best of Both Worlds

Managing two full-time roles — academic and entrepreneurial — was never easy. For nearly a decade, the physical and mental demands were immense. And the learning curve was steep. Coming from academia, Dr. Kaysi had little formal training in business management, operations, or strategy. Much of his knowledge was self-taught — acquired through books, courses, and direct experience. Navigating legal systems, adapting to regulatory frameworks, and securing funding added to the complexity.

Still, his exposure to diverse cultures during his time studying in the U.S. had already helped prepare him for international expansion and his academic background turned out to be an unexpected asset in the private sector, earning him credibility and confidence with clients.

One of his key messages is that stepping outside the academic "comfort zone" is challenging, but essential for growth. "It's a jungle out there," he says — but one worth stepping into. For those considering a similar path, he encourages pushing personal and professional boundaries, not waiting for the perfect moment, finding the right partner, and, above all, applying their expertise in new arenas where it can make a greater difference.

> "PERHAPS MOST IMPORTANT, DR. KAYSI STRESSES THE VALUE OF BLENDING THEORY WITH PRACTICE."

His industry experience brought real-world relevance into the classroom — through case studies, applied projects, and lived examples that made learning more engaging and meaningful for students. That balance, he believes, is something every academic should strive to achieve.

MSFEA and the Road Ahead

Looking forward, Dr. Kaysi sees an important role for MSFEA in shaping the next generation of entrepreneurially-minded engineers. Faculty, he believes, should be encouraged to engage more directly with industry and real-world challenges. That means breaking out of static teaching material and building stronger connections with the private sector.

Students, on the other hand, should think about turning their final-year projects (FYPs) into entrepreneurial springboards and exploring ventures while still enrolled at the university. Dr. Kaysi has sought not to choose one path, academic or professional, over the other, but to bridge them. His story offers a model for what's possible when knowledge expands beyond campus gates.

OFF-DUTY STUDENTS: THE STORIES OF TWO MSFEA ENTREPRENEURS

By Alain Maliha

Reading time: Around 3 mins

Tight deadlines, packed schedules, and the constant juggling act between coursework and ambition are part of the daily life for most university students. But for MSFEA students Georgy El Hallal and Mohamad Issa, that familiar hustle sparked something bigger. Instead of putting their passions on hold until they graduate, they built businesses around them.

During COVID-19 lockdowns, Georgy El Hallal—then just a 15-year-old 9th grader— was already thinking like an entrepreneur. As Lebanon grappled with economic collapse, political instability, and a health crisis, he noticed something else unfolding: the youth were losing motivation, drifting without purpose in the midst of chaos. That's when he decided to launch Next Big Thing (NBT), a youth-focused event management business that wants to bring purpose back into young people's lives.

GEORGY EL HALLAL: BUILDING LEBANON'S NEXT BIG THING

What started as a passion project quickly developed beyond that. Today, NBT manages everything from festivals to sports leagues to one of its major initiatives: Future Debate Masters, a debate competition that began as a small academic competition but has grown into a main event in North Lebanon.

"We went from just three schools to hundreds of students across the area, and that momentum didn't stop there," Georgy said. Last year, NBT even organized Tripoli's summer festival, a large-scale event typically managed by more established agencies.

Getting NBT off the ground came with its fair share of challenges. "Convincing business owners to take you seriously at 15 was not easy, and finding the right team early on was crucial as well," Georgy shared. Now a mechanical engineering student at AUB, he still works to find a balance between academics and entrepreneurship. His secret? "Big thanks to Cafe Najjar that helped me survive until now;" he joked. On a more serious note, he added, "when you give your all to the things that matter most, it's still hard, but at least it becomes possible." To fellow students, Georgy's message is clear:

> "INSTEAD OF TAKING YOUR IDEA ABROAD, BRING THE WORLD TO LEBANON."

OFF-DUTY STUDENTS: THE STORIES OF TWO MSFEA ENTREPRENEURS

MOHAMAD WAJIH ISSA: HOW A CHILDHOOD OBSESSION CAN BECOME A SIDE HUSTLE

Mohamad's side hustle wasn't born in a lab or a classroom—it began in his bedroom, surrounded by more than 40 Lego sets, including a few handed down from his father. What started as a lifelong obsession with Lego eventually evolved into Lego Lebanon Hub, a specialized e-commerce platform created by Mohamad, now a Computer Science and Engineering student at AUB.

But turning a childhood passion into a serious business was no easy feat. In Lebanon, the Lego market is dominated by a handful of big players. Sets are expensive, hard to find, and delivery options are limited and unreliable. Mohamad saw an opportunity to do things differently through Lego Lebanon Hub, to offer better prices and accessibility and to target an often-overlooked market: adult Lego fans.

"People think Lego is just for kids," he says, "but the most loyal customers are the ones who've been building for years." That insight has become central to his strategy. And he's not stopping at online retail—his long-term goal is to become Lebanon's leading Lego distributor. To other young entrepreneurs, Mohamad shared simple advice:

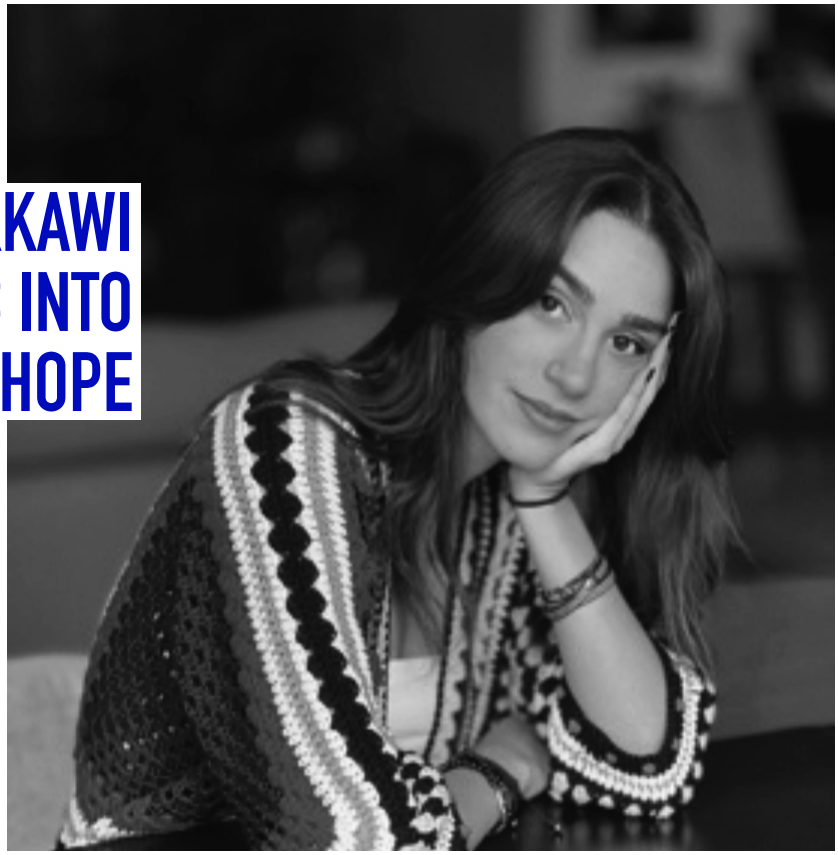
"START WITH SOMETHING YOU TRULY LOVE."

He believes that successful businesses need a deep passion and a smart business model. Even in an unusual field like toys, he has experienced how having a deep understanding of the industry and offering a fresh solution to a real need can make all the difference.

HOW SARAH AKKAWI TURNED ARTBYSASS INTO A PLATFORM OF HOPE

By Shayene Kamel

Reading time: Around 3 mins



In 2019, Sarah Akkawi entered the Graphic Design program at the American University of Beirut (AUB) just as Lebanon was about to face one crisis after another: a revolution, an economic collapse, a pandemic, and a devastating explosion. Amidst the chaos, Sarah quietly launched an Instagram page called Artbysasss—at the time, a small digital corner where she could share her feelings through illustrations.

That modest page soon grew into a recognizable brand, resonating with thousands across the region. It began as a creative outlet and evolved into a career-defining platform that blends art, activism, and identity.

Art as Resistance, Art as Hope

The timing of Sarah's journey shaped the purpose of her work. "Everything came one after the other," she recalls. "I opened my art page as a way to share my thoughts, but also to reflect what was happening—and to do it in a way that spreads hope, not sadness."

Rather than using art to dwell in despair, Sarah turned to digital illustration to process Lebanon's collective trauma. Her style often includes bold visuals with poetic text—sometimes her own writing and sometimes excerpts from iconic Lebanese voices like Gibran Khalil Gibran or Fairuz. The result is a visual diary that both documents and uplifts.

It didn't take long for her work to catch on. As protests erupted and national discourse shifted online, her illustrations were widely shared by platforms like Live Love Beirut and even by celebrities. She was featured in Haya Magazine, and more recently, appeared on TV following her first solo exhibition.

The AUB Years: Where Practice Met Purpose

Throughout her undergraduate years, Sarah used the skills she was developing in class to elevate her content. From Adobe Illustrator and Photoshop to photography and layout, AUB gave her the tools—but the vision was entirely her own.

One of her greatest inspirations came from AUB itself: Tanya Traboulsi, a photographer who taught one of Sarah's classes. "She was so motivating," Sarah says. "She told me to use my own photos in my art—it made my work more personal."

"Graphic design at AUB helped me so much in creating my own style," she says. "My page became a platform for my ideas—but also a portfolio." While classmates were preparing CVs and PDFs, Sarah's Instagram doubled as a living résumé. It showcased not just finished projects, but personality, voice, and values. "People would DM me directly. I started getting freelance jobs, collaborations—everything came from that page."

Growing a Brand, Facing Burnout

With visibility came pressure. "The hardest part is consistency," she admits. "You have to keep posting, coming up with ideas—it's a full-time job."

She also speaks candidly about the creative blocks that come with constant exposure. "Sometimes you don't know what to do anymore. It's so competitive. You need time and space to create content, and that's not always easy when you're still in school."

But Sarah learned to adapt. She began creating mockups to make her designs feel more tangible, realizing that the audience often needs help visualizing a concept. "If I designed a coffee shop logo, I'd show it on cups, menus—even if the shop hadn't launched yet. People like to see things brought to life."

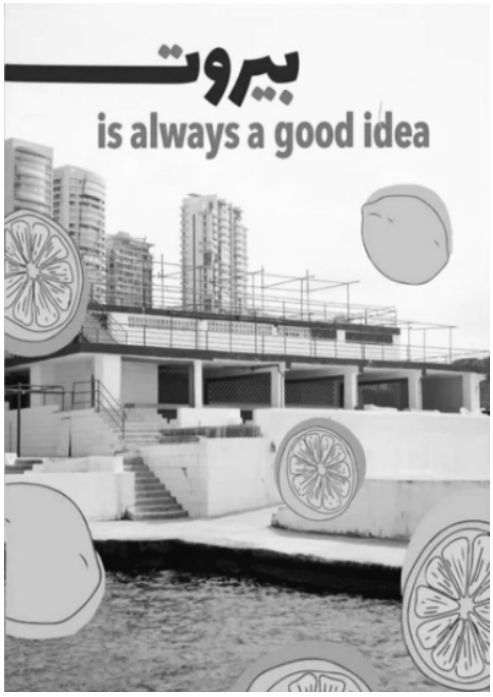
Advice to the Next Creatives

For current students thinking of launching their own platforms, Sarah is encouraging but practical. "Don't wait for everything to be perfect. Start the page. Don't just send PDFs to companies—share your work publicly."

She also urges aspiring artists to learn how to present their work visually, especially through mockups and context. "People won't always understand a class project but if you frame it the right way, it can speak for you."

"I BELIEVE IN SHOWING YOUR WORK TO THE WORLD," SARAH SAYS.

"THAT'S HOW PEOPLE FIND YOU. THAT'S HOW YOU GROW."



AHMAD SAFIYA: MAKING WAVES IN EVERY LANE

By Antoine Moussa

Reading time: Around 3 mins

From a near-tragic accident to swimming championships, CCE student athlete Ahmad Safiya's journey is a powerful story of resilience, hard work, and discipline.

From Near-Tragedy to Triumph

Picture this: a young child who could barely walk finds himself nearly drowning in the sea. That terrifying moment could have ended his story—but instead, it sparked it. Encouraged by his mother, Ahmad began his swimming training, commuting from Nabatiyeh to Saida for his lessons. His early competitions had mixed results, ending up in second place in one, but last in another. Yet, his determination was not so easily hindered by his losses, and with the support of his family, he kept at it, perfecting his craft and soon enough finding himself competing in national, Arab, and international competitions.

Now a computer and communications engineering (CCE) student at AUB, Ahmad juggles 6-7 hours of daily training alongside his studies. "When you're under that kind of pressure, you learn to get things done almost automatically," he says. His secret to productivity? Start early, stay consistent, but learn to enjoy the process so that you don't burn out.

"IT'S NOT JUST ABOUT PERFECTING A STROKE; IT'S ABOUT MASTERING LIFE'S RELENTLESS PACE."

SPOTLIGHT

Ahmad's hard work hasn't gone unnoticed. Receiving the President's Athletic Scholarship at AUB isn't merely a personal win; it's life-changing: "This scholarship isn't just a personal achievement; it's a tribute to everyone who believed in me." As a student athlete at AUB, Ahmad has participated in several swim meets, including the World Championship in Doha. Ahmad learned to see the beauty in every challenge. Every single event, no matter how insignificant it may seem, has helped mold his own path, setting four Arab records and competing on the global stage along the way.

While engineering and swimming may seem worlds apart, Ahmad sees strong parallels between them. "Engineering has made me more disciplined and focused, which helps a lot in swimming," he says—a lesson to him, that's as applicable in life as it is in sports.

But not every day is a smooth sailing. One of Ahmad's tough challenges is his daily commute from Jnoub to Beirut. More recently, Ahmad and his family faced a deeper personal challenge when his mom was diagnosed with cancer two years ago, a moment that nearly pushed him to give up swimming entirely. Yet through patience and quiet perseverance, he kept going. "That's the beauty and paradox of life," he reflects, struggle can either break you or build you—and Ahmad chose the latter.

In the classroom, Ahmad is committed to completing his engineering degree while making the most of his university years. In the pool, his sights are firmly set on the upcoming World University Games in Germany—a major milestone on his athletic journey. His ambitions don't stop there. The Olympic dream remains very much alive, with long-term goals to keep representing Lebanon and competing at the highest levels of international swimming.

When asked what advice he'd give others, Ahmad has a clear message:

"BE PATIENT, CHASE YOUR GOALS LIKE YOU CAN'T IMAGINE LIFE WITHOUT THEM, AND ABOVE ALL, HAVE FUN WITH THE PROCESS."

Whether you're an aspiring athlete, a busy student, or simply someone navigating life's rough waters, Ahmad's story is a powerful reminder: dive in, embrace the chaos, and let every setback become a new opportunity to make waves.

DR. JOSEPH ZEAITER: THE TOP 2% SCIENTIST WITH 100% COMMITMENT TO LEBANON

By Farid Abi Doumit

Reading time: Around 3 mins

Dr. Joseph Zeaiter, Associate Professor of Chemical Engineering at MSFEA and Director of the Vertically Integrated Projects initiative, has dedicated his career to advancing both education and research. After a successful global career in industry, he returned to Lebanon to join the newly launched Chemical Engineering program at AUB, contributing to the development of the curriculum, as well as research and laboratory infrastructure. His groundbreaking work in waste-to-energy conversion and solar-thermal-chemical processes has earned him recognition among the top 2% of scientists in his field. Driven by a passion for impact and mentorship, Dr. Zeaiter continues to inspire students to pursue research, think critically, and find purpose through meaningful, real-world challenges.

A Lifelong Passion for Chemistry and Impact

During his early childhood, Dr. Zeaiter felt a connection to chemistry. His passion for experimenting, finding results, and trying to make sense of them translated into a highly successful career in Chemical Engineering. He earned a Bachelor of Science in Chemistry from the Lebanese University then pursued a Bachelor of Engineering in Chemical Engineering at the University of Sydney, where he graduated with first-class honors and later obtained his PhD.

Before joining AUB, Dr. Zeaiter worked for nearly 8 years in the industry. At Invensys (now Schneider Electric), he served as lead engineer and senior consultant on major projects across several countries, including Australia, Malaysia, and Singapore.

Despite his many successes in industry, he felt the need to return to his home country. When asked why he returned at the height of his career, Dr. Zeaiter says he felt the need to make an impact. Working abroad, he realized, limited his ability to contribute meaningfully to society and new generations. At AUB, he found purpose in close student interactions, knowledge transfer, and an inviting campus environment.

Building a Legacy at AUB

When Dr. Zeaiter returned to Lebanon and joined AUB, he set out to help with the newly established Chemical Engineering program. He participated in designing the curricula for the Bachelor and Master programs in Chemical Engineering. At the time, AUB lacked the necessary labs and equipment to support the discipline—a gap that Dr. Zeaiter, along with other professors, worked on filling.

He recalls that, in the early days, conducting chemical engineering research at AUB meant working with limited resources and improvising with what was available. Yet, those challenges never deterred him — and today, he's seeing the rewards of his persistence and the lasting impact of his contributions to Chemical Engineering at the university. One of Dr. Zeaiter's most notable accomplishments is being named among the top 2% of scientists in chemical engineering by Stanford University. Throughout his time at AUB, Dr. Zeaiter has published many influential papers, many of which focused on converting waste to energy to produce hydrogen and syn gases.

He also was one of the first researchers to explore the integration of solar energy using reactors that concentrate solar radiation to run pyrolysis processes. His pioneering research gained traction when one of his papers about using dry methane reforming to produce hydrogen was cited more than 1000 times.

Dr. Zeaiter continues to expand his research while remaining deeply committed to education. As he puts it, his goal is to "give back to the community that has given him so much." He advises young students to learn as much as possible and explore topics related to their interests. "People excel the most in the disciplines they are most passionate about," he says.

AHMAD AT SPILL: WHERE COFFEE MEETS COMMUNITY

By Celine Sawaya

Reading time: Around 3 mins

Spill is more than just a small coffee counter at the entrance of Bechtel Design Hall. Sure, it is where students line up for coffee in between classes, pick up a quick bite, or get a much-needed espresso during finals period. But it is also where students chat, laugh, and connect with the people who make MSFEA what it is. At the heart of it all is Ahmad, Spills' barista and manager extraordinaire. More than just the friendly face behind the counter, Ahmad has become an anchor of student life at MSFEA.

A Student Story from the Start

The "Spill" brand started out as a student-led initiative based on a graphic design project. Students competed to create the entire concept, logo, and identity for a coffee shop with the guidance of the marketing and retail managers at Café Najjar. Four graphic design students created the name "Spill," and the rest followed suit. At its core, Spill is for students, by students. Whether that means opening for two extra hours during finals or opening on Saturdays, the staff always shows commitment to fulfilling the students' needs.

Ahmad has been at Spill since it was just him, an espresso machine, and a pitcher. He was part of the pre-opening team that was assembled in January 2023, during which he was chosen to lead the concept. However, his journey with hospitality started much earlier in 2007 with experience at many popular restaurants and coffee shops. Leveraging this, he joined Café Najjar as a coffee consultant. Soon after, the retail manager, Shadi, believed in his potential and allowed him to take charge of Spill. Ahmad dreams of making Spill the flagship concept across all universities and expanding it beyond MSFEA. He hopes to balance profit and purpose, saying that "winning comes later."

Behind the Counter

Ahmad has plenty of behind-the-counter moments. Ahmad's typical routine consists of opening the shop, managing the stock and inventory, taking orders and supporting his team, preparing for the next day, and closing. He highlights the high volume of orders (on average, around 700 orders in 10 hours!) and the fast service – only when Joe, Alex, and Elie are not in the line. But Ahmad's favorite tasks are working behind the counter and talking to people. He describes being at Spill as interacting with family, not customers.

One time, during a long line, a student who always orders chocolate pies said, "Hi badde chocolate pie". Amused by the rhythm, Ahmad started singing "Hi badde chocolate pie" and the rest of the staff joined in! Another time, Ahmad overheard a student's friends discussing an espresso machine they wanted to give him for his birthday. Remembering the date, Ahmad gifted the student a Spill mug and tried to surprise him. Students return not just for coffee but for a moment of familiarity and fun during their day. "In the long run, people are what matter," he says.

Ahmad's core philosophy is "Anything I do for myself; I do for others." He strives for customers to get the value they deserve and prioritizes their well-being. He understands what customers expect and echoes this through his interactions. Ahmad remembers everyone's orders as a reflection of the connections he builds. When asked how he does it, he says that he draws upon the little similarities he shares with each student. Ahmad finds things in common with almost everyone, whether discussing coffee or sharing the same taste in pies and desserts. He even takes the time to share an espresso with those who ask.

Even during our interview, students passing by said hi. That is the kind of presence he has—one that blends perfectly into student life. That's why Spill feels like more than a coffee shop - because it is.

THE FINAL YEAR FILES: 2025 FYPS ACROSS MSFEA

By Antoine Moussa

Reading time: Around 5 mins

Every year, MSFEA seniors channel their education into one final challenge: the Final Year Project. But these projects are more than academic exercises, they're real-world problems tackled with student skills, creativity, and teamwork. While hundreds of FYPs are completed annually, this collection offers a closer look at just a few standout projects from AY 2024-2025 across different departments. From recycling rubble into building blocks to simulating saxophones in VR, this year's projects spanned environmental innovation, AI, cybersecurity, music, and manufacturing. Here's a look at what MSFEA's Class of 2025 built—and what they learned along the way.

ECE/CCE FYP: Revolutionizing Autonomous Driving in the Global South

Team Members
Ralph Al Fata, Mohamad Al Katranji, Hassan Hammoud, Mostafa Kassem

The Problem
Autonomous driving technologies are primarily designed for environments with solid infrastructure and predictable traffic. However, in regions like the Global South, where roads are often poorly designed and traffic is chaotic, autonomous systems struggle to function reliably.

The Solution
The ECE/CCE team aimed to make autonomous vehicles viable in these regions. Their approach focused on developing a system that could navigate unpredictable traffic, potholes, and obstacles like motorcyclists and poorly marked roads. They used a stereo camera to map environments and simulate driving scenarios.

The Journey
Starting with the NXP Cup, a high-stakes autonomous racing competition, the team gained valuable experience and soon expanded their vision. Despite having no prior experience in autonomous vehicles, they managed to design an innovative system that could tackle real-world driving challenges. Their breakthrough came when they successfully mapped an entire environment using just a stereo camera.

The Takeaway / Advice

"SHOOT FOR THE MOON. EVEN IF YOU MISS, YOU'LL LAND AMONG THE STARS." THE TEAM'S ADVICE IS TO EMBRACE BIG CHALLENGES AND STAY DETERMINED, EVEN WHEN THINGS SEEM IMPOSSIBLE.

CHEN FYP: The Greener Side of Palm Oil

Team Members
Lara Alhassanieh, Hened Sabbagh, Majd Chedid

The Problem
Palm oil production is a major industry, but it comes with a significant environmental cost: for every spoonful of oil produced, four spoons of waste are generated. This waste is rich in oil, yet it is typically discarded without being utilized.

The Solution
This chemical engineering team developed a method to convert palm oil waste into renewable energy. Their project aimed to extract biodiesel and hydrogen from the waste, offering a sustainable and cost-effective energy solution.

The Journey
Transitioning from Aspen HYSYS to Aspen Plus software was a significant challenge for the team. Despite this, they successfully developed a process that achieved 90% biodiesel yield and 60% hydrogen production from glycerol. Their work also included process simulation, equipment sizing, and feasibility studies.

The Takeaway / Advice

Start early, choose a project that truly interests you, and stay committed even when other coursework competes for your attention.

"ALSO, MAKE SURE TO HAVE FUN WITH YOUR PROJECT. IT'S YOUR FYP!"

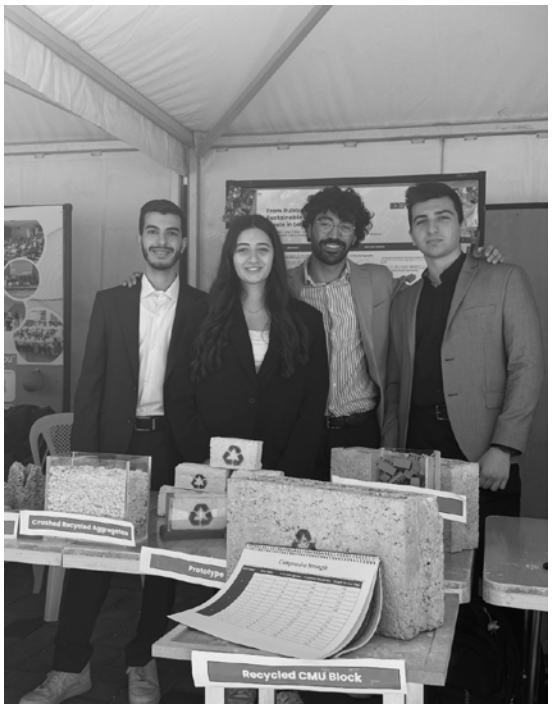
CIVIL FYP: Recycling Rubble into Concrete Blocks

Team Members
Ahmad Mehdi, Luay El Bitar, Jad El Osta, Kinda Bdeir

The Problem
After the war, Lebanon was left with huge amounts of rubble and no proper way to manage it. And now more than ever we need affordable building materials to rebuild homes and communities.

The Solution
Turning rubble into concrete blocks, called CMUs. By using recycled aggregates, they produced CMUs with a compressive strength of over 455 kilonewtons, stronger than what is normally required.

The Journey
While testing and sourcing the rubble posed some challenges, the team's hard work paid off when their recycled blocks met and even exceeded the standard in almost all tests. They hope to integrate this solution into Lebanon's national reconstruction plans.



The Takeaway / Advice

"CHOOSE PROJECTS WITH REAL-WORLD IMPACT AND EMBRACE ITERATION."

Don't hesitate to take your work outside the lab and engage directly with real-world scenarios.

MECH FYP: Smart Trash Bin for Lebanon's Waste Management

Team Members
Maria Debs, Antoine Hatab, Joseph Noun, Julien Kenaan

The Problem
The main problem is that trash in Lebanon is not being sorted properly. Additionally, manual sorting is expensive and inefficient, so recycling our waste with these conditions is near impossible, which leads us to increased pollution rates.

The Solution
This team aims to design a smart trash bin that can automatically sort waste, including glass, plastic, and tissues, to streamline the recycling process and reduce labor costs.

The Journey
Through multiple iterations and collaborations with their FYP funder Jamil Ballout, who initially came up with the idea back when he himself was an AUB student (winning the prize of the FYP Accelerator Program for his project), they are now looking to implement the smart trash bin at AUB and eventually scale it across Lebanon. The team faced several delicate challenges across a multitude of professions such as design, automation, and many others, but their collaboration and passion kept them on track.

The Takeaway / Advice

"CHOOSE A PROJECT YOU'RE PASSIONATE ABOUT."

Focus on getting your design phase completed early to make room for testing and manufacturing. Make sure to manage your time effectively for maximum impact.

CSE FYP: Virtual Reality Saxophone

Team Members
Alex Juvelekian, Joseph Souaiby, Ralph Jabbour

The Problem
Learning to play an instrument like the saxophone can be expensive, inconvenient, and sometimes difficult for beginners. There's also a lack of accessible music education tools.

The Solution
This team combined their love of music and innovation to create the first-ever virtual reality saxophone game. Their VR app allows users to practice playing the saxophone with accurate finger placement and sound generation.

The Journey
The team faced challenges, particularly in terms of providing realistic haptic feedback for the instrument. They initially aimed for portability but later pivoted to focus on music education. They developed the app to run on standalone VR headsets, cutting out the need for a connected PC.

The Takeaway / Advice

"FOLLOW YOUR PASSION"

— it'll keep you going through the late nights. Select teammates who align with your working style and enjoy making something meaningful that you care about.

INDE FYP: Almaza's Process Optimization

Team Members
Elias Chaptini, Edmond Abi Abdallah, Bechara Najem, Gianni Francis

The Problem
Almaza, Lebanon's iconic brewery, was struggling with forecasting accuracy, downtime, quality control, and ergonomic risks in its operations.

The Solution
This team worked directly with Almaza to solve these issues using data-driven solutions. They optimized processes such as sales forecasting, proposed solar panel installation for cost-saving, and recommended strategies for improving quality and worker safety.

The Journey
Despite challenges accessing data and delays due to the war, the team achieved impressive results: improved forecasts, a proposal for a $743,000 solar panel investment, and better production quality strategies. Their work included data analysis and proposal development, and they even got to see fresh beer off the production line.

The Takeaway / Advice

"PICK A PROJECT YOU CARE ABOUT, AND ENSURE THE COMPANY YOU WORK WITH SHARES ENOUGH DATA. COMMUNICATION IS KEY, AND MANAGING THE LOGISTICS OF PLANT VISITS IS CRUCIAL. ENJOY THE RIDE!"

MEET THE INDE BROTHERS WHO ARE REVOLUTIONIZING EVENT TICKETING IN THE MIDDLE EAST

By Alain Maliha

Reading time: Around 3 mins

In this picture, Cedric Zovighian, Marc Gharios and Ralph Gharios, the three co-founders of Tick'it.

Ralph and Marc Gharios are two INDE graduates who turned a frustrating concert experience into Lebanon's leading ticketing platform—Tick'it.

As university students, we've all been there, excited for a festival or concert we've been waiting months for, only to find out that tickets are sold out, are being sold at inconvenient locations, or require frustrating payment systems. Even event organizers struggle with issues, from managing promotions to streamlining sales. That's when Marc and Ralph Gharios, industrial engineering graduates from MSFEA, along with their partner Cedric Zovighian, saw an opportunity.

THEIR IDEA WAS SIMPLE: DIGITIZE TICKET SALES AND MAKE PAYMENTS ACCESSIBLE TO THE PUBLIC.

But the more they spoke with event managers, the clearer it became that the issue wasn't just about selling tickets. What this sector really needed was an event management platform. And just like that, in 2022, Tick'it was realized. What started as a simple ticketing app evolved into a one-stop shop for event organizers, offering tools for sales, marketing, and operations.

Building a Business in a Tough Market

Building a startup is hard anywhere—but in Lebanon, it's especially challenging. Ralph and Marc had to get creative in the face of numerous challenges, such as assembling a team on a tight budget and convincing main event organizers to trust their platform.

Their background in industrial engineering played a major role, putting optimization and system efficiency at the core of their startup. The data-driven strategy they adopted made Tick'it stand out and rise in the Middle Eastern market. In the first six months, the app reached 18,000 users and processed over half a million dollars in ticket sales. This milestone was achieved thanks to partnerships with established payment companies like Whish, BOB Finance, and OMT, which helped them overcome the online payment issue in Lebanon. Today, 60% of Lebanon's music event ticketing goes through Tick'it, making it the country's leading platform in this domain.

Scaling Up: Regional Growth and Global Mindset

With Lebanon as their testing ground, the brothers refined their model before moving into regional markets. "A mistake in Lebanon doesn't cost as much as it would in places like the UAE," says Ralph, "but it taught us essential lessons that we're applying in other places."

That mindset — of learning, iterating, and adapting — prepared them to expand confidently across the Middle East. Tick'it is now growing beyond borders, earning them a spot on Forbes Middle East's 30 Under 30 and an appearance on Shark Tank Dubai, where they declined a major investment to retain equity and continue developing the product on their terms. Today, Tick'it serves over 80,000 users—and counting.

To current MSFEA students who want to start their own ventures, Marc says: "University gives you the theory, but nothing beats building something from the ground. Find a real problem, create a solution that exceeds expectations, and most importantly, always be critical, listening to feedback so you grow past current limitations."

Even after building a market-leading platform and gaining regional recognition, Marc and Ralph Gharios remain grounded in their roots. For them, AUB isn't just where it all started — it's where they lived their most transformative years. Their story is a testament to the power of curiosity, grit, and vision. Tick'it is proof that with the right mindset, bold ideas can become bold realities.

WHY NOT? FROM AUB TO THE WHITE HOUSE WITH DR. FADEL ADIB

By Farid Abi Doumit

Reading time: Around 3 mins

Dr. Fadel Adib has left a significant mark on the AUB community. A graduate of the Computer & Communications Engineering program at AUB, Dr. Adib further pursued his Master's and Ph.D. at the Massachusetts Institute of Technology (MIT). Originally from Tripoli, he made history by achieving the highest digitally recorded GPA in AUB's history. Throughout the Arab world, Dr. Adib is recognized for receiving the prestigious Great Arab Minds award for his groundbreaking research on wireless technology and wireless sensing. His innovations have opened new frontiers, enabling humans to see and sense through walls, beneath rubble, inside the human body, and even deep underwater—continuously redefining the limits of possibility.

AUB Roots, Lifelong Bonds

Dr. Adib's journey into research began early. In his second semester at MSFEA, he became involved in research—a path that would eventually lead him to the White House. By his third year, he had already published his first research paper as an undergraduate student. Reflecting on his time at AUB, Dr. Adib speaks of the lasting bonds he formed during his undergraduate studies, which played a significant role in his decision to attend the university, a place that became a second home to him. Many of the friends he made at AUB remain close, with some even working beside him at MIT.

Dr. Adib views AUB as a microcosm of Lebanon itself: a country made up of diverse communities, where people are deeply interested in each other and are very "resilient," a word Dr. Adib loves and hates simultaneously. While he admires the strength it represents, he dreams of a Lebanon where resilience is no longer a necessity for survival but rather a celebration of achievements, success, and a thirst for life.

A Door to MIT and an Invitation to the White House

Dr. Adib's ambition to attend MIT was clear from his early years at AUB. He envisioned MIT as the institution where he wanted to complete his studies. While still at AUB, he diligently worked on making that vision a reality by working on research. His dedication paid off when he was selected for a summer internship at MIT. For Dr. Adib, it felt like he went from one home at AUB to another at MIT.

Dr. Adib went on to complete his graduate studies at MIT, a time marked by a commitment to drive positive change through innovation. His Master's thesis was focused on using Wi-Fi—without any other advanced tools—to detect motion and people through walls.

EVENTUALLY, HIS GROUNDBREAKING RESEARCH REACHED THE WHITE HOUSE. DR. ADIB AND HIS TEAM WERE ASKED TO PRESENT THEIR NEWLY DEVELOPED DEVICE—CAPABLE OF TRACKING HEARTBEATS, EMOTIONS, AND STRESS LEVELS THROUGH WIRELESS SIGNALS—TO FORMER PRESIDENT OBAMA.

In addition to recalling Obama's charisma—and unexpected height—Dr. Adib remembers a high-stress moment leading up to the White House presentation. Just three hours before showtime, their device stopped working. Under immense pressure, he reassembled it from scratch. That stress left a trace: during the live demo, the device registered his heartbeat at 110 bpm.

While much of his research centers on enhancing human life, Dr. Adib also tackles global challenges like climate change and supply chain resilience. Today, a key theme of his work is rooted in robotics, with a focus on giving machines x-ray vision—the ability to see inside sealed containers, for example. His team is also exploring how to integrate this technology into augmented reality headsets, enabling real-time "see-through" capabilities for people. Dr. Adib is also passionate about translating his research into startups. His PhD research led to a healthcare startup called Emerald Innovations, and he is now the CEO of Cartesian, a company he spun out of his lab to commercialize his team's inventions in retail and supply chain.

"Why Not?" For AUB students aspiring to follow in Dr. Adib's footsteps, he offers a key piece of advice: seek out mentors and actively engage with them. These mentors can provide valuable guidance and open doors to opportunities. In his own words, Dr. Adib says the most crucial advice he received is to question the impossible and pour everything into making it possible. For him, the most important question is not "Why?" or "How?" but rather "Why not?"

WHEREVER SHE GOES, NATURE GROWS: DR. SALMA TALHOUK'S LEGACY AND VISION FOR A GREENER MSFEA

By Tamara Arakji

Reading time: Around 3 mins

Professor Salma Talhouk began her academic journey with a strong focus on laboratory research, analyzing plant DNA and conducting experiments within controlled settings. However, she soon realized that nature conservation extends beyond research and is deeply connected to people and communities.

A Multidisciplinary Vision for Conservation

As a professor in the Faculty of Agricultural and Food Sciences, Dr. Talhouk noticed a recurring issue in conservation: many research projects lose momentum before creating long-term impact. This led her to a critical realization—conservation efforts shouldn't be limited to biologists alone. She believed that professionals from all disciplines, including economists, marketers, and policymakers, should contribute to protecting the environment.

In 2002, she was determined to bring her vision to life by gathering a group of like-minded individuals at the American University of Beirut (AUB), whom she called the "hippies" of the university. At the time, cross-disciplinary collaboration was rare, making it difficult to form a cohesive team. Despite these challenges, her initiative eventually led to the creation of AUB's Nature Conservation Center (NCC), a hub where students and experts from various fields work together on real-world conservation projects.

While scientific interest in plants has traditionally focused on their medicinal properties, agricultural uses, and cultivation methods, few institutions have brought these aspects together in a comprehensive, interdisciplinary effort.

AUB's Nature Conservation Center (NCC) took a pioneering approach. Its leadership brought together experts from fields as varied as chemistry, business, and landscape architecture—a structure that reflected the center's core mission: merging insights across disciplines to cultivate a deeper, more integrated understanding of nature conservation.

Dr. Talhouk also played a key role in shaping AUB's Landscape Architecture program, emphasizing that landscape architects should serve as a bridge between people and the natural world, understanding and responding to the needs of both.

As part of her efforts, Professor Talhouk significantly influenced AUB's campus landscape. Recognizing that AUB, despite its lush greenery, was never officially a place where botanical tours were offered to the university community, she initiated efforts to transform the campus into a botanical garden one by labeling plants, offering plant tours, and integrating conservation efforts into campus life.

Bringing Nature to Engineering and Design

Last year, the Department of Landscape Architecture moved to MSFEA, and Dr. Talhouk found herself faced with a new challenge: nature was largely absent from the faculty's focus. While MSFEA is known for prioritizing sustainable technological and engineering solutions, nature concerns were rarely considered by the faculty.

Determined to change this, she launched MSFEA Earthmark, an initiative grounded in the Skill, Action, Knowledge, and Empathy (SAKE) framework. Earthmark will introduce new efforts and courses that embed nature into engineering and design education and research, encouraging students who are passionate about the environment to explore these subjects. By integrating ecological concepts, Dr. Talhouk hopes the program will broaden students' perspectives and equip the next generation of engineers and architects with the mindset to design projects that respect and accommodate natural ecosystems.

Dr. Talhouk is also collaborating with Dr. Dany Abou Jaoude and Dr. Ibrahim Issa on a national project called Saving Lebanon's Biodiversity (SLB). The initiative includes the development of a mobile app that uses image recognition to identify plant species. They are also exploring advanced technologies, such as drones, to aid in reforestation and the expansion of Lebanon's green spaces.

Through her innovative work, Dr. Salma Talhouk continues to inspire students and professionals to rethink their role in shaping a more sustainable future.

For her, nature conservation is a shared responsibility that transcends disciplines and calls for collective action. What's your part?

PREPARING FOR CONSULTING HAS NEVER BEEN EASIER: A RECORD-BREAKING YEAR FOR AUBCC

By Shayene Kamel

Reading time: Around 3 mins

With 627 members in 2024–25, the AUB Consulting Club (AUBCC) once again became the largest student club in AUB's history, breaking its own record. This milestone was the product of a dedicated 7-member team — Joseph Choefati, Alex Juvelekian, Mohamad Ali Nachar, Rhea Abdelhay, Celine Sawaya, Mohamad Wajih Issa and Sarah Milan — brought together with a clear mission: to cultivate a pool of exceptional talent for top consulting firms and empower students to launch successful careers. This year, AUBCC didn't just honor that mission—it expanded it, offering students the tools, community, and real-world opportunities they needed to break into the industry.

Fostering a Healthy and Supportive Consulting Community

Consulting can often feel gated, especially for students unfamiliar with case interviews. AUBCC set out to change that. From day one, the club fostered an environment where all students—regardless of major or experience—felt welcome. The year kicked off with the club's first-ever Social Gathering, a casual yet purposeful event where newcomers connected with experienced members and like-minded peers. Initiatives like Case Connect paired students with offer-holders for one-on-one coaching, while the Case Matching Group made it easy to find practice partners. The Individual Support Initiative (ISI) ensured students had access to personalized help for resumes and interviews. Together, these efforts built a culture of giving back and peer-driven growth.

Learning from the Experts

The club's flagship Ace the Interview series offered eight firm-led workshops covering profitability, M&A, atypical cases, and more. Sessions were led by consultants from firms such as BCG, Kearney, and Strategy&, giving students direct exposure to real expectations. One attendee per session received a free CaseCoach membership, adding extra value to the experience. Together, these workshops gave students the tools, structure, and confidence needed to approach interviews with top firms.

Creating Real Opportunities

AUBCC hosted three major case competitions, judged by top firms including Strategy&, FTI Consulting, and Four Principles. These weren't just great learning experiences, 12 students secured guaranteed interviews with the abovementioned firms through these competitions. The club also partnered with Roland Berger to launch a six-month consulting internship for AUB graduates, offering a facilitated recruitment process and potential full-time conversion.

Supporting the Post-Offer Journey

AUBCC continued to support members beyond the offer stage, helping them prepare for life inside consulting. The 80-20 Series covered essential topics like time management, networking, and key skills for success. Practical workshops focused on storytelling, think-cell, information design, slide design, and MBA planning, while the Internship Panel connected students with returning interns to set clear expectations for consulting internships.

Building Resources and Industry Connections

To support students at every stage of their consulting journey, AUBCC rolled out its most comprehensive resources yet. The 2024–25 Casebook, used by students across top universities like McGill, HEC, and Bocconi, featured the largest collection of original cases in club history. It was accompanied by the Winter Break Checklist and The Complete Guide, a roadmap covering profile-building, applications, and insights into consulting in the Middle East. At the same time, AUBCC connected students with the industry through hands-on initiatives like Beat the Case, a weekly case-solving competition focused on region-specific cases and rewarded top performers with mock interviews from firm consultants. By combining expert exposure with high-quality tools, AUBCC equipped students to navigate recruiting with confidence, turning preparation into career-defining opportunities and helping them take decisive steps toward their future.

Setting the Bar for Consulting Prep Across the Region

With consulting interest at an all-time high, AUBCC didn't just meet the demand, it exceeded it. Through its initiatives, competitions, and resources, the club built a stronger, more supportive community, guided students to launching careers in consulting, and opened real doors into the industry. This record-breaking year is a testament to what students can achieve when united by purpose and driven to uplift others. AUBCC set a new standard for student-led career preparation across the Middle East and reaffirmed its core mission: cultivating exceptional talent and empowering students to launch successful consulting careers.

INTO THE FUTURE

THE FUTURE OF MSFEA? IT'S ALREADY HAPPENING. JUST ASK THE DEAN.

By Mario El Khoury

Reading time: Around 4 mins

Cogs & Caffeine sits down with Dean Alan Shihadeh to explore what lies ahead for one of AUB's most dynamic faculties. But before diving into the roadmap for tomorrow, we begin with the story of the man shaping that future.

Born and raised in the United States to Palestinian parents, Dean Shihadeh has a unique perspective that informs his approach to both engineering and leadership. A mechanical engineer by training, he began his career designing cogeneration power plants and later pursued graduate studies at MIT, where his interest in the intersection of politics and technology began to take shape. After completing his PhD in combustion and aerosol research, he returned to the Middle East with a vision: to contribute meaningfully to the development of the Global South. He began teaching at Birzeit University in Palestine before joining AUB in 2000. Since becoming Dean in 2017, his mission has been to empower students to become agents of change in their communities; a strategy that's guiding MSFEA's next chapter.

The Future, Visualized

When asked to imagine the future of MSFEA, Dean Shihadeh's vision is clear: "MSFEA should be the number one dream school for anyone in the region wanting to study engineering, design, or architecture. A student should be saying, 'I hope I get into AUB, but I'll apply to the University of Toronto, for example, as my backup.'"

This aspirational mindset reflects a faculty in motion—one that's evolving not only in rankings or facilities but in its very DNA. For the Dean, that evolution centers around both technical and nontechnical skills, through design thinking, hands-on learning, impactful communication, and entrepreneurial confidence. "We're not just preparing students for graduate school," he says. "We're preparing them to create new opportunities in Lebanon and the region. The goal is to graduate people who feel confident that they can start something on their own."

Unlike traditional visions that center on reputation or metrics alone, MSFEA's future is built on a clear, purpose-driven strategy. The Dean and his team have developed a cascading structure of "charters," with each department aligning with a broader faculty-wide mission. KPIs and internal dashboards are already in place and changes are underway. For instance, by next fall, active learning formats will account for 30% of credit hours offered at MSFEA.

"Everything we're doing comes back to one idea: we want students to walk into the faculty, feel empowered, and leave knowing they can change the world," says Dean Shihadeh.

Design is the New Core

One of the boldest shifts in MSFEA's future is the integration of design across all programs. Historically, engineering education has leaned heavily into theory, often reserving real-world application for a final-year capstone project. That model is being turned on its head. "In the future, design isn't the cherry on top. It's in the batter", the Dean says. Students will engage in intensive, interdisciplinary design work every semester. The faculty has already piloted this through initiatives like the Red Room, the entrepreneurship initiative, and human-centered design courses. Now, it's time to scale.

The Dean emphasizes the bold direction MSFEA is heading: "We're moving from experimentation to institutionalization. Soon, every student graduating from MSFEA will have started two companies before they leave. That's the level of creative confidence we're aiming for."

Each department at MSFEA is being reimagined to reflect the evolving needs of students and industry. Students are already seeing new experimental courses each semester—from quantum engineering to biomedical design. Minors and new tracks are in the pipeline, including: sports engineering, data analytics with physical product design, and circular design, inspired by ecological systems and sustainable manufacturing.

Most notably, the Dean is advocating for greater flexibility across majors. He encourages students to lobby in their departments to allow electives outside their field to count toward graduation. "If a course makes you a better engineer, you should be allowed to take it," he says.

A Faculty That Reflects Its Students

While other engineering faculties might have released formal strategic documents, MSFEA has taken a different approach. Its vision is no less ambitious, but it's more organic, more experiment-driven, and more rooted in the unique freedoms of the Lebanese context.

"We have a liberal arts spine, a strong engineering school, and a country that gives us space to explore ideas. That combination is rare in this region," Dean Shihadeh says. "We have to use it."

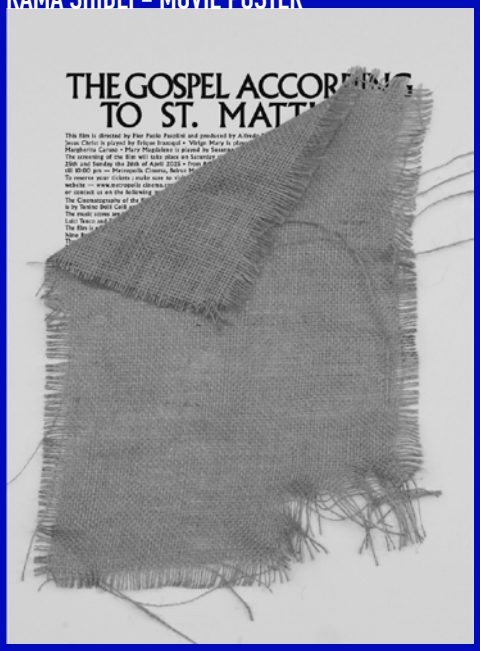
What kind of students will MSFEA attract in the future? According to the Dean, it should be those who ask big questions, take bold steps, and aren't afraid to build something from scratch.

He sees MSFEA as more than just a faculty. It's a platform for regional transformation, and it's a launchpad for students with ambition, ideas, and a desire to stay and shape their communities. And he hopes that long after his time as Dean, that legacy will hold.

> "I WANT STUDENTS TO WALK THROUGH THIS PLACE AND FEEL LIKE THEY CAN DO ANYTHING," HE SAYS. "BECAUSE IF WE GET THAT PART RIGHT, THE REST WILL FOLLOW."

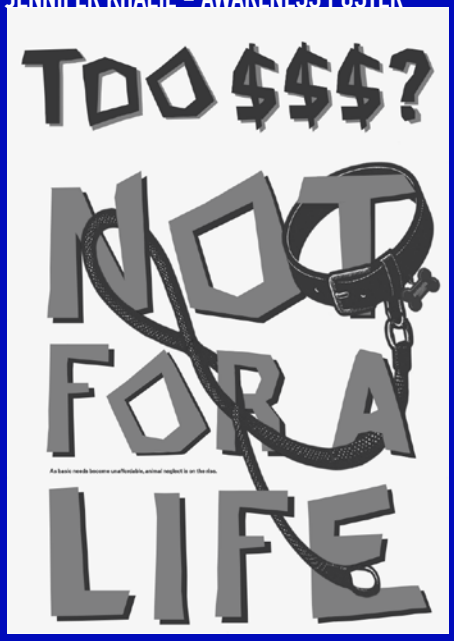
MIRA SINNO – AWARENESS POSTER

RAMA SHIBLI – MOVIE POSTER

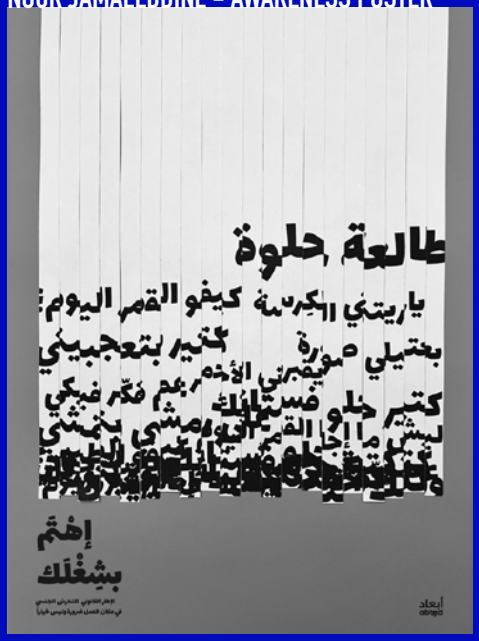


YARA ZGHEIB – AWARENESS POSTER

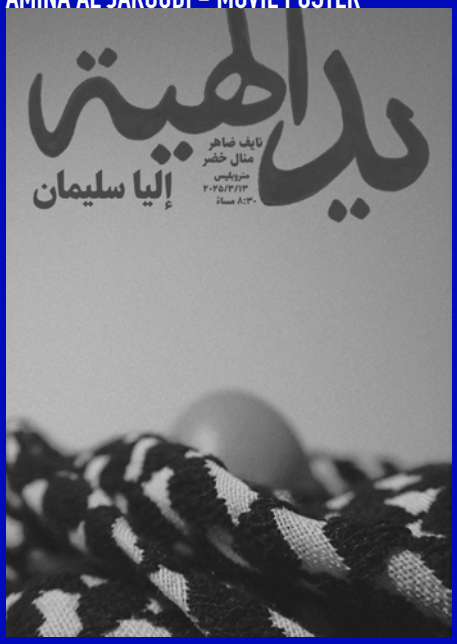
JENNIFER KHALIL – AWARENESS POSTER



NOUR JAMALEDDINE – AWARENESS POSTER



AMINA AL JAROUDI – MOVIE POSTER



ALI EL HAJJ MOUSSA – CHILDREN BOOK COVER

FATIMA CHAMSEDDINE – MOVIE POSTER

*CONTINUATION OF GRAPHIC DESIGN SPOTLIGHT

STUDENT CLUBS AND ACTIVITES

Spring 2025

WIE: WINNERS OF THE BEST ACTIVITY AWARD AT IDEAS 2025

IEEE: PROTECTION OFFICE APPRECIATION IFTAR

SSEA: ANNUAL BEACH CLEANUP

ESS: ANNUAL CHRISTMAS DINNER WITH THE CABINET

AUBCC: THE TEAM BEHIND THE LARGEST CLUB IN AUB HISTORY

IISE: WINNERS FROM THE WOLF OF BEY CASE COMPETITION

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