HOME

THE SOUL OF LEBANON



Marlo Thomas

THE LEBANESE-AMERICAN MEGASTAR BEHIND
ST. JUDE CHILDREN'S RESEARCH HOSPITAL

LEBANON THROUGH THE EYES OF
FRENCH AMBASSADOR
H.E. Bruno Foucher

RAGHIDA DERGHAM
THE COURAGE TO COME HOME

Dr. Mohamed H. Sayegh
AT THE HELM OF AUBMC

LEBANON'S CHAMPION
Chirine Njeim
OLYMPIC SKIER TO
OLYMPIC RUNNER

Pierre Rabbat
LIGHT-HEARTED HUMOR,
SHAKING THE STATUS QUO

Antonine University



On the fast track to the future with BMW

Photo by Michel Sostaro

A collaboration between Antonine's TICKET Research Lab and premier automobile manufacturer BMW accelerates students' success.



Photo by Cesar Ghandour

TICKET Lab Director Bechara Al Bouna, Ph.D., receives an award of appreciation from Jimmy Nassif, Ph.D., BMW logistics head of VI and VR.

Jimmy Tekli recalls his internship in Antonine University's (AU) TICKET Lab, working on data anonymization, the process of encrypting or removing personally identifiable information from data sets to protect privacy. TICKET, which stands for Telecommunications, Information and Computer Key Enabling Technologies, was established in AU's Faculty of Engineering in 2009 to catapult the university's scientific research to the forefront of international research.

Tekli graduated at the top of his class. Today he is working at the BMW group in Munich while pursuing a doctorate degree in multi-media anonymization using deep learning (a type of artificial intelligence) approaches.

Jo Rouhana Moussa, another former AU student, is a software engineer with BMW's electric cars charging services team. "After a successful internship, I received a job offer," he said.

It's not just any job, explained TICKET Research Lab Bechara Al Bouna, Ph.D. BMW is a forward-looking company whose title of its 2017 annual report is *Toward the Future*. It started designing its 2116 cars in 2016. When the automobile manufacturer's 100th anniversary rolled around that same year, it also launched its plan: *The Next 100 Years*. So, in keeping with this mindset, it offers lifetime contracts in the heart of one of the most innovative companies in the industry.

> **BMW is tapping into the mind capital of Lebanon's bright students while providing them with an opportunity to engage in contextualized, real-world research.**

"After three successful years of cooperation that has created more than 16 internships, including two Ph.D.s and one full-timer, this seed has turned into a tree and flourished with the visit of the BMW Vice President Dr. Dirk Dreher to solidify our collaboration by signing a memorandum of understanding."

With it, BMW is tapping into the mind capital of Lebanon's bright students while providing them with an opportunity to engage in contextualized, real-world research.

As Jimmy Nassif, Ph.D., head of AI and VR at BMW Logistics noted, "Today's students are learning about new innovations at major universities in Lebanon. They can further expand their learning and experience from industry leaders like BMW, where they become more specialized in their fields of study while investigating and developing innovative solutions for practical usage in concrete application scenarios."

Al Bouna attributes its success to three factors:
1. Antonine University's strong academic engineering program.
2. The ongoing management and supervision provided by TICKET Lab.
3. Hardworking students and their willingness and drive to succeed.

Tapping into Lebanese talent
The cooperation between BMW Group and TICKET Research Lab demonstrates "the potential of our students to keep up with the rapid pace of innovation and emerging technologies," said AU Dean of Engineering Chady Abou Jaoude, Ph.D. Marcus Bauer, BMW's Project Lead for Smart Planning, says: "To bring our innovations to life, we need the support of talented students. We want to give them the lead for the coding of these new applications."

Marc Kamrodt, head of BMW's IT Innovation Lab, adds: "The Antonine University students are very professional and they work hard while delivering projects related to deep learning and machine learning (the science behind self-driving cars, speech recognition, effective web search and more, based on programming computers with algorithms). They were able to work under pressure and deliver results successfully.

> **For researchers and graduate students in Lebanon, keeping up with the pace of technological innovation in the West is no easy feat in a brain-rich, cash-poor country.**

Fueling the future
For researchers and graduate students in Lebanon, keeping up with the pace of technological innovation in the West is no easy feat in a brain-rich, cash-poor country.

At BMW, the AU students find themselves engaged in today's leading technologies. Jean Marc Azzi and Abbas El Haj talk about the thrill of working on deep learning and computer vision, both related to artificial intelligence.

Keeping pace in TICKET Lab
The TICKET Lab seems simple; it looks like a study hall, with desks and computers. But on the screens, you'll see complex calculations and hear about projects that seem to be from sci-fi movies. AU students gain experience in TICKET Lab that enables them to leap into BMW and other industry environments, ready to fulfill challenging roles.

Lab Director Al Bouna nurtures the young engineers and inventors. His own love of research is contagious. He graduated at the top of his class at Antonine University and went to France in an exchange program for his Ph.D. After a post-doc in Qatar, he was recruited by AU to teach and, in 2015, became the director of TICKET Lab.

Smiling, he said, "What motivates me is this epsilon you are going to add to the literature. It is new. It is a small, sometimes miniscule contribution, but we are not repeating ourselves."

It's like programming, he said. "When you program, you have outcomes you can see and touch. You create something."

Al Bouna can always spot those students who are motivated by the work itself. "They lose track of time, work night and day," he said. "They are dedicated to work and love it."

The culture in the lab is new and exciting; students are inspired and inspiring, said Al Bouna. Some students work on innovative technology, on cases provided by BMW. "If they work hard and acquire the necessary skills, they will have the chance to go to Munich."

Another group is collaborating with a lab in the Faculty of Music on music parsing of traditional mashriq music, an analysis of the language of music through software into logical syntactic components.

Researchers at TICKET Lab have recruited 18 research assistants to develop research in fields related to sensor network, data privacy, human-computer interaction, antenna design and networks optimization. Seven of these research assistants are doctoral students enrolled at French universities.

Six of the eight research projects submitted to the joint grant research program by the National Council for Scientific Research (CNRS-L) and UA were accepted. These projects will provide researchers at TICKET Lab with extra income to recruit research assistants and to cover their travel expenses.

More opportunities on the horizon
Through its collaboration with BMW Group, Antonine University has tapped into additional benefits, the first being the opportunity to participate in a common application between BMW Group and several other Lebanese universities, including the American University of Beirut, the Lebanese American University and Notre Dame University - Louaize, to Horizon 2020, the European Union's biggest research and innovation program.

The European Council confirmed in July its intention to step up its efforts to support research and innovation. By joining the consortium, collaborating with BMW Group and participating in the collaborative application to Horizon 2020, AU is stepping on the fast track of research and innovation.

> **Mind capital is the main wealth," said Antonine University President Father Michel Jalakh.**

Lebanon's innovation-driven economy
"This is a very precious opportunity for countries like ours, where mind capital is the main wealth," said Antonine University President Father Michel Jalakh. "I believe that investing in innovation, and relying on the talents of our young, yet outstanding researchers, is our royal path toward economic prosperity and social development."

HOME MAGAZINE

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