Antonius Chedid

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OBJECTIVE

Driven problem-solver with proven experience and international exposure, seeking an internship or a full-time position in engineering, consulting, or technical writing. U.S. passport holder, and able to start immediately.

EDUCATION

American University of Beirut (AUB) | Beirut, Lebanon   Sept 2017 – May 2021
B. Eng. in Mechanical Engineering, minor in Political Science. Graduated with distinction in May 2021 (GPA: 3.70/4.00).

USEK School of Music and Performing Arts | Kaslik, Lebanon   Sept 2012 – May 2015
First degree diploma in violin teaching and performance with high distinction. Courses in music theory.

WORK EXPERIENCE

Project Designer | MaktabaTech | Beirut, Lebanon   Oct 2019 – Present
- Spearheaded the development of a mobile app for teaching English, Arabic, and French to underprivileged school children and refugees. Click to see MaktabaTech website.
- Collaborated with school in disadvantaged area of Beirut to observe classes, interview teachers, and test the app.
- Devised app design with augmented reality features, yielding an increase in students' homework completion.
- Oversaw the school's adoption of our app for their in-house use and integration into their curriculum.

Renewable Energy Research Intern | AUB | Beirut, Lebanon   May 2020 – July 2020
- Performed exhaustive literature review on wind turbines, including their aerodynamics, mechanics, electronics, materials, components, manufacture, design, siting, and control. Presented research to panel of AUB professors.
- Created comprehensive slide sets on wind turbines, which professors and graduate students of AUB's mechanical engineering department now use as reference material for their research.

Team Leader – Engineering Pedagogy Study | AUB | Beirut, Lebanon   May 2019 – December 2019
- Assembled and led team of colleagues in studying how to improve engineering education at AUB.
- Conducted extensive interviews with students. Identified six main areas for improvement, with recommendations.
- Presented findings to Dean of Engineering, who adopted our insights as part of his strategic plan.

TECHNICAL PROJECTS

- **Emotion Detection System for Human-Computer Interaction:** Created an award-winning computer program to monitor dementia patients' emotional state, then respond to improve said state. Trained machine-learning algorithms (convolutional neural networks and support-vector machines) to classify a patient's emotional state based on speech and facial cues. Created human-robot interaction features involving games and music therapy. Won **"Dean's Award for Creative Achievement"** at AUB.
- **Assembly Line Mechanism:** Designed and built a mechanism for packaging and moving crates on an assembly line. Invented original design with rack and pinion system, created 3D SolidWorks models, and manufactured a working prototype from wood, aluminum, and plexiglass.
- **Formula One Race Car:** Using to-scale engineering drawings from the internet, built a scale model of a Formula One Race Car. Manufactured individual components from steel and unplasticized PVC with machine shop equipment.
- **Water Heating System:** Designed a hybrid solar- and gas-powered water heating system for a building in Beirut as part of a graduate course on thermal system design. Used thermodynamics, heat transfer principles, and market information to optimize solar collector, storage tank, pipes, and pump characteristics, thereby saving an estimated $8,500 in operating costs over a 15-year period.

RELEVANT COURSEWORK

- **Human-Centered Design:** Learned and applied product ideation techniques, design ethnography, and rapid prototyping. Instructed by a visiting professor from the Stanford d.school.
- **CAD and Manufacturing:** Learned the fundamentals of engineering drawing, AutoCad, and Creo Parametric. Studied the theory behind different materials and their uses, metal machining, cutting tools and fluids, machining economics, and additive manufacturing. Received machine shop instruction during lab sessions.
- **Operations Management:** Learned business decision-making techniques including linear programming, and quality control tools such as Total Quality Management, Taguchi Concepts, and House of Quality. Performed case study to help a mock bike manufacturer handle a projected 20% increase in sales. Identified bottlenecks in the manufacturing

process, presented plans for improved quality control, and performed inventory classification that would allow the corporation to meet increased demand and raise profits by 63% over a one-year period.

- **Electronic Circuits:** Learned fundamentals of analog and digital circuits, semiconductor diodes, transistors, operational amplifiers and their applications, digital circuits and systems, and basic instrumentation.

ACTIVITIES

Violinist | AUB Classical Music Club | Beirut, Lebanon   Sept 2017 – Present
Performed as a soloist and an orchestra member at concerts and charity events across Lebanon.

SKILLS

Languages: English (native), Arabic (native), Italian (intermediate)
Machine Shop Skills: CNC Machine, Laser Cutter, Drill Press, Handheld Drill, Bandsaw, Milling Machine, Lathe
Computer Skills: AutoCAD, SolidWorks, Creo Parametric, Autodesk Fusion 360, G-Code, Machine Learning, LaTeX, MATLAB, LabVIEW, C++, M.S. Office
Business Skills: Product Ideation, Human-Centered Design, Operations Management, Negotiation, Decision-Making