FATHY IBRAHIM

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EDUCATION

American University of Beirut (AUB)

Beirut, Lebanon

- Bachelor of Science in Computer Science   *Aug. 2021 –May 2025*
- Double Minors in Mathematics and Arabic
- Cumulative GPA: 3.97/4.0 (4.0 highest)
- Relevant coursework: Programming in Java, Data Structures, Database Systems, Computer Architecture and Design, Operating Systems, Numerical Computing, Computer and Information Security (Ongoing/ this Fall), Data Science (Ongoing), Software Construction (Ongoing), Theory of Computation (Ongoing), Linear Algebra, Discrete Mathematics, Calculus III, Calculus IV & Differential Equations.

Virginia Commonwealth University (VCU)

Virginia, USA

- Visiting Student, Tomorrow's Leaders Study Abroad Program.   *Aug. 2023 – Dec. 2023*
- Cumulative GPA: 4.0/4.0 (4.0 highest).
- Relevant coursework: Algorithm Analysis and Design, Intro to Theory of Probability, Real Analysis.

WORK EXPERIENCE

American University of Beirut

KAS CRSL, AUB

Web Development Intern   *June 2023 – July 2023*

- I utilized Microsoft SharePoint to upgrade the CRSL website, which is hosted by AUB's website.
- Innovatively designed new front-end interfaces for an elevated user experience on the website.

Amis Calc NGO

Python Instructor   *April 2024 – May 2024*

- I collaborated with a community organization, namely Amis Calc, to volunteer as a programming instructor, teaching a class of 30 high school students the concepts of programming in Python.

IDS Academy

.NET Full Stack Development Intern   *August – October 2024*

- Gaining practical skills in .NET full stack development, C# for backend, and RESTful API development.
- Learning various front-end technologies as well as learning and applying Agile methodologies.

PROJECTS

- **Secure Remote Work Solutions for Financial Institutions** _ Designed a multi-layered cybersecurity architecture for a financial institution enabling secure remote work. My role included conducting a detailed Security Risk Analysis, identifying major security risks and their business impacts, and developing a robust architecture using Microsoft Visio. I was also responsible for drafting a Remote Access Security Policy that translates security best practices and standards into clear guidelines for

the company's remote employees. This role emphasizes my expertise in developing strategic solutions that protect sensitive financial data against cyberthreats that target remote work environments.

- **Data Science Capstone on Armed Conflict _** Analyzed a large 'Armed Conflict' dataset for my data science course, building classification and clustering models to predict escalations from demonstrations and peaceful protests to violent clashes. This work, based on data from the ACLED NGO, is aimed to provide actionable insights and recommendations for Lebanese NGOs.
- **Battleship Game Development _** Developing two versions of the classic Battleship game in C: a two-player mode and a bot-vs-player mode. The bot includes an easy AI with a basic targeting strategy and a hard AI leveraging a heatmap algorithm for probability-based targeting, with sophisticated tactics.
- **Raspberry Pi ARM Kernel Development _** Designed a small kernel for a Raspberry Pi, featuring a CLI with dynamic memory allocation and Caesar cipher functionality. Implemented custom memory management and developed a CLI for basic command processing. Built and tested the kernel using QEMU for emulation and managed the build process with a Make file. This project demonstrates my understanding of low-level programming, ARM architecture, and kernel development.
- **Travel Management System _** Built a Travel Management System using Node.js and Express for the backend. Developed a comprehensive raw SQL database and designed a simple UI that enables users to perform all CRUD operations on key tables such as "cities" and "countries."
- **Covid Bed Management System _** Created a Covid Bed Management System with Flask and a customized bootstrap template. Integrated authentication and authorization systems for user interaction with the database.
- **Calorie Tracker Python App _** Developed a Calorie Tracker app in Python featuring both a CLI and Tkinter-based GUI. The app enables users to track daily calorie intake, set and track diet goals.
- **Prototype for an NGO's Website _** Designed a website prototype for the "Bridge of Hope" NGO using HTML, CSS and JavaScript. Created a user-friendly platform to support students' mental health.

AWARDS AND ACHIEVEMENTS

- Awarded the Tomorrow's Leaders full scholarship by the US Department of State to pursue a Bachelor of Science degree at AUB and study abroad as a visiting student at VCU in Richmond, VA.
- Placed on the Dean's honor list 4 times at AUB as well as on my semester abroad at VCU.
- Elected as a cabinet member at AUB's Arabic student society for the academic year 2024/25.
- Participated in the General Assembly conference of the Arab Youth International Model United Nations (AYIMUN) in Dubai, May 2022. I was chosen to represent and be the delegate of the Kingdom of Jordan. I had the opportunity to meet 150 other delegates from 70+ different countries.
- Selected by the AUB MEPI team and the AUB-abroad office to spend the Fall semester of the academic year 2023/24 abroad at Virginia Commonwealth University (VCU).

TECHNICAL SKILLS AND CORE QUALIFICATIONS

Programming Languages: Java, Python, R, C, C++ & MATLAB.
Software and Data Engineering: SQL, Pandas, Numpy, Scikit-learn, Git & .NET.
Languages: Proficient user of English (IELTS Score: 8.0/9.0), Native in Arabic.