LIZA BABAOGLU

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My Website • LinkedIn • GitHub Page • YouTube Page

EDUCATION

University of Toronto, Faculty of Applied Science and Engineering, Toronto, ON.
Electrical and Computer Engineering (Year 3)
Cumulative GPA: 3.66/4.00 *Expected Graduation:* May, 2024 (with one industry year in 2023)

Relevant Courses: Computer Fundamentals (C/C++); Engineering Strategies and Practices II; Digital Systems; Computer Organization; Software Communication and Design; Electrical Fundamentals; Signals and Systems

Awards: Dean's Honours (all semesters); Leadership Award; Mind Olympics Finalist; Math and Chess Awards; 50+ international/national/regional sport medals.

Scholarships: Dean's Merit Award; Faculty of App. Sci. and Engineering Admission; Barbara Mcann Tribute.

PROFESSIONAL EXPERIENCE

Data/Software Engineer Coop at **Smart Nora**, Toronto, ON. (Remote) May 2021 – Aug 2021
• Performed data wrangling and analysis to decipher meaning from metadata, quantitative tests and analysis.
• Built ad-hoc tools and interactive visualizations using Python, to transfer technical data into business decision pathways.
• Maintained and updated two iOS applications on Xcode and reviewed their audio and csv files on AWSS3.
• Conducted various consistency and performance focused field tests to replicate customer experiences and to provide clarity on customer needs using a data driven approach.
• Revamped brainstorming and technical discussion by "offering excellent ideas to tackle issues."

Academic Tutor at **PAPER,** Montreal, QC. (Remote) Nov 2020 – Present
• Guided students in grades four to twelve in math, science, and computer programming.
• Assisted problem solving and understanding critical concepts via a one-on-one online texting and drawing platform.
• Examined academic problems, by asking them questions and helping their progress with the Socratic teaching method.

Research Intern at **Data Science Laboratory, Ryerson University,** Toronto, ON. May 2020 – Aug 2020
• Conducted exploratory data analysis on vehicle collisions from Canada's National Collision Database (NCDB).
• Implemented data mining methodologies, and investigated key contributing factors that lead to fatalities.
• Utilized and tested supervised learning classification models to predict fatalities with more than 80% accuracy.
• Researched, conducted literature review; wrote a technical research paper; and collaborated with laboratory members.
• Research paper "Prediction of Fatalities in Vehicle Collisions in Canada" accepted for publication in "Promet - Traffic & Transportation", double-blinded peer-reviewed scientific journal.

Student Intern at **Toros Filtration,** Istanbul, Turkey. July 2018 – July 2019
• Introduced, presented, promoted the company's original "Oil Purification System" to 100+ investors, engineers, sales representatives, and guest visitors in the Hannover Messe International Conference, Germany.
• Increased the English interaction with potential customers by 30%, and was recognized as the most diligent member.

Founder of **LizDesign,** Toronto, ON Founded in July 2018
• Allowed quick and inexpensive production of personalized objects through my designs in Fusion360 and 3D printing.
• Designed, printed, marketed, delivered original and personalized ornaments, keychains, coasters, and frames.

Other Experiences: Intern at Exceed Robotics; UofT Summer Camp Counselor; Math Tutor; Volleyball Coach.

PROJECTS

Towers of Hanoi Game (Team Project)
• Built the digital version of the Towers of Hanoi game on a ARMv7 DE1-SoC simulator, *CPUlator*.
• Implemented multiple I/O devices, such as the VGA pixel buffer, PS/2 Keyboard, Seven-segment HEX Display, LEDs, Switches, Character Buffer, and ARM A9 Private Timer.
• Designed animations, developed the game logic and its I/O components, using the *C programming language*.
• Added features, such as a recursive auto-solver, invalid move detector, and colorful introduction and win displays.

I AM - Inclusive and Accessible Map (Team Project)
• Built a Geographic Information System (GIS) software program, in *C++ programming language,* that displays and solves travel and optimization problems in maps of any city of the world.
• Utilized StreetsDatabase and OSMDatabase APIs to query a geographic information database about information such as street names, intersection locations, points of interests and features; and organize them into appropriate data structures.
• Drew multiple map features, such as streets, lakes, parks, restaurants, and allowed map navigation and interactions from the user through the EZGL graphics library.
• Developed unique properties for color blindness, and wheelchair accessibility to empower every person on the planet to achieve more.
• Implemented the (A*) path finding algorithm and optimized the computationally hard travelling courier problem with Multi Destination Dijkstra algorithm and k-opt local search algorithm.

The Impacts of International, Domestic, and Local Mobility on COVID-19 Deaths (Team Project)
• Conducted data analysis on the collection of multiple open-source datasets in international health and tourism, using *Python, R,* and *Tableau*; presented using *LaTeX, Adobe After Effects,* and *Camtasia.*
• Wrote a research manuscript and performed a presentation on the National Undergraduate Big Data Challenge 2020.
• Selected as finalists, where our abstract got published in the STEM Fellowship Journal.

My Personal Website (Solo Project)
• Built and designed a unique, interactive, and dynamic website using *HTML, CSS, JavaScript,* and *GitHub.*

Game Development (Solo Projects)
• Built an original iOS application that receives an input - word, name, or a sentence - from the user in English and/or Armenian letters and displays a personality describing positive word for each letter in their respective alphabets, using *Swift, Xcode,* and *App Icon Generator.*
• Developed an algorithm for the Reversi game which can play against a human opponent, as well as a computer opponent (or itself), using *C programming language*.

Other Projects: Multiple team projects in biomedical engineering, wildlife, and environment fields.

LEADERSHIP & AFFILIATIONS

Engineering Athletic Association (EAA), Toronto, ON June 2020 – Present
Elected *Vice President Finance (Former Women's Director)*
• Prepared financial documents and maintained a balance sheet for budget, payments, reimbursements, and sponsorships.
• Narrated and participated in the matriculation video to welcome the 1000+ freshmen and introduce our club, and events.
• Organized all women's sports teams and participated in council and committee meetings overseeing more than 100 players.

University of Toronto's Aerospace Design Team (UTAT), Toronto, ON Sept 2019 – Nov 2020
Space Systems – Active Member in both Mechanical Structures and Firmware Systems
• Researched technical requirements, vibration and shock test specifications, material and manufacturing methods regarding the structure of our 3U CubeSat ("FINCH"), which will be launched to space.
• Developed the watchdog timer on the STM32 CubeIDE.

Other Leadership & Affiliations: Team Leader and Project Manager of university course projects; Intramural Games; Armenian Students Association; LiveGreen Volunteer; Angel Alert Emergency Volunteer

SKILLS

Language: English (native), Armenian (native), Turkish (native).
Computer: Proficient in C, C++, R, Python, ARM, Swift, Xcode, MATLAB, Intel Quartus, HTML, CSS, JavaScript, STM32 CubeIDE, ModelSim, DE1-SoC, Arduino, LaTeX, Camtasia, Fusion360, Microsoft Applications.