Zakariya Arale

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TECHNICAL SKILLS

Languages: Python, Java, C, HTML, CSS, JavaScript, Bash/Shell scripting
Frameworks & Libraries: Pandas, Scikit-Learn
Tools & Technologies: Git/GitHub, Linux, VS Code, Socket Programming, Asynchronous Programming
Concepts & Skills: Object-Oriented Programming (OOP), Data Structures, Algorithms, Machine Learning, Software Development Life Cycle, API Development

EDUCATION

Honours Bachelor of Science (CSC Co-op)   **2024 - Present**
University of Toronto Scarborough, Toronto, ON
- Software Engineering Co-op + Math Major (GPA: 3.97)

EXPERIENCE

RBI SE Coach   **Jun 2024 – Aug 2024**
Jays Care Foundation
- Demonstrated strong problem solving and interpersonal skills by interacting with campers, addressing their needs, and resolving conflicts to promote a safe and inclusive camp environment
- Collaborated with coaches to plan and run various sports activities in a tight time constraint, developing problem solving and project planning skills and providing captivating athletic activities for campers

Academic Pathways K-12 Tutor   **May 2023 – May 2024**
Toronto District School Board
- Tutored students in math and science for 2 hours weekly, creating practice materials and guiding them through homework, increasing their grade averages by 10%
- Demonstrated analytical thinking by developing clear, concrete examples to simplify complex concepts, making coursework more understandable

Youth In Policing Initiative Student   **February 2023 – June 2023**
Toronto Police Service
- Led a team for a mental health PSA by assigning roles and tracking progress, resulting in publication of the PSA within one month
- Edited an 11-minute mental health PSA, adding transitions, music, and visual effects to create a polished and engaging video
- Nominated as Valedictorian for the 2023 Winter/Spring YIPI graduation for demonstrating exceptional work ethic at TPS, resulting in delivering a speech to 300+ attendees

PROJECTS

Personal_Portfolio | HTML CSS JavaScript   **May 2025 - Present**
- Designed a responsive website with HTML, CSS, and JavaScript, ensuring compatibility for desktop and mobile users

- Developed interactive features to enhance user engagement including navigation bar, fade-in transitions and hover effects for social links
- Optimized web runtime performance by creating reusable classes across the webpage and implementing smooth animations with minimal JavaScript code

Async_Battleship | C Linux   **Jul 2025 - Aug 2025**
- Utilized I/O multiplexing for linux systems and non-blocking sockets to build an asynchronous server that enables real-time gameplay for 100+ users without delays
- Engineered the API by using various data structures to track user info and ship status to broadcast updates of the game status with minimal storage usage
- Strength error handling and resource management by handling invalid inputs and client disconnections, resulting in a 90% reduction in server crashes

Cardio_Predictor | Python Scikit-Learn Pandas   **May 2025 - May 2025**
- Implemented a Random Forest Classifier to predict cardiovascular disease risk based on a patient's health data resulting in a model with 23% higher accuracy than baseline model
- Applied controlled train/test splits and evaluated model performance using confusion matrices, accuracy, and classification reports to effective select the best predictive model

AccountSim | Java   **Jan 2025 - Feb 2025**
- Designed and implemented a bank simulator using Object-Oriented design in Java leveraging classes to securely store account information and transactions resulting in a robust banking simulator
- Applied the software development cycle to test and improve storage usage and runtime using Object-Oriented design resulting in a 30% improvement in runtime and storage usage
- Designed and implemented various algorithms to effectively validate user information enhancing the security and reliability of a banking simulator

Budget_Manager | Python   **Dec 2024 - Jan 2025**
- Engineered a personal budget manager in Python, enabling users to add/remove expenses, priorities expenses, and export the list in a text file simulating a real world financial management tool
- Utilized various data structures and algorithms including tuples, compacted lists, and reusable functions to optimize storing users' budget and expenses resulting in 20% reduction in storage usage
- Applied input validation with regex to enforce correct monetary values, strengthening error handling and improving reliability of the financial tool