Abdallah Elsayed

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Skill Highlights

- **Programming & Tools:** C, C++, C#, Python, Java, JavaScript, TypeScript, React, Node.js, Next.js, HTML, CSS, Tailwind, JWT, Jira, Figma, MySQL, MongoDB, PostgreSQL, Redis, Vulkan, GLFW, Imgui, FastAPI, Flask, Spring Boot, Git, GitHub Actions, Gitbook, Docker, AWS ECS & EC2, Terraform (IaC), Visual Studio, vi/vim, Make, CMake, Maven, Windows Forms, Unity, Unreal, Godot, Blender, Photoshop.
- **Development:** Game development, Graphics/Physics engine, mobile application development, fullstack web development, Windows desktop programming.

Experience

June 2024 - Aug 2024

HWO Optics & ML Intern – *NASA*

- Conducted research and development on cutting-edge coronagraph technology, contributing to NASA's mission to discover habitable exoplanets.
- Optimized the performance of deformable mirrors (DMs) using predictive CNN machine learning algorithms, enhancing the precision and efficiency of wavefront correction systems.
- Collaborated with leading experts on high-contrast imaging, creating Python scripts to develop training data for machine learning models that improved data simulation accuracy.
- Played a key role in the open science development for the Habitable Worlds Observatory (HWO), focusing on advancing the software and algorithms behind the observatory's coronagraph instruments.
- Engaged in hands-on experience with advanced optical systems, including a tour of STScI and Goddard, where you worked closely with a 250-actuator parabolic DM.
- Delivered technical presentations and contributed to team meetings, showcasing improvements in coronagraph system performance through AI-enhanced techniques.

March 2024 - Present

Software Engineer – *GenLogs*

- Developed and implemented a centralized Customer Identity and Access Management (CIAM) system, integrating seamlessly with multiple teams' APIs and portals to streamline SSO authentication and RBAC authorization processes across the company.
- Spearheaded the solo development and early launch of the Asset Locator API and portal, originally planned as a prototype for 2025, delivering it 6 months ahead of schedule through exceptional performance and dedication. This initiative directly contributed to securing contracts worth over $300K and enabled customers to generate millions of dollars in returns.
- Optimized core database queries, reducing execution time from one minute to just a few seconds, significantly enhancing system performance and user experience.
- Brought down the loading time for displaying thousands of images to users from tens of seconds to milliseconds, dramatically improving user interaction with the product.

- Set up multiple monitoring solutions for APIs and products using Sentry, Google Analytics, and Hotjar, ensuring proactive issue detection and performance tracking.
- Accelerated the development of an internal monitoring tool to effectively observe and manage devices deployed nationwide, providing real-time insights and improving operational responsiveness.
- Developed the initial frameworks for CI/CD pipelines using GitHub Actions, automating build, test, and deployment processes to ensure faster and more reliable software delivery across various projects.

January 2024 - May 2024

Data Structures Professor Assistant– *George Mason University*

- As a teaching assistant in a data structures class, I contributed by grading assignments, addressing student queries, and offering guidance during class projects. My role involved fostering a deeper understanding of data structures concepts and ensuring students' success..

September 2023 - Jan 2024

Bulba Code Eval– *Remotasks*

- Engaged in the enhancement of various AI models by analyzing responses and providing constructive feedback. Focused on coding-based prompts, the work involved refining and improving the models for more accurate and contextually relevant outputs.

August 2022 - Jan 2023

Fullstack Starter – *Interclypse*

- Contributed to an e-commerce website project, implementing Node.js and React for a dynamic frontend, while utilizing Java and MongoDB for a robust backend system managing inventory and products.

Profession Development

January 2024 - May 2024

Low–Level Programming – *Grade: A+*

- Topics: C Types, Operators, and Expressions, Basic I/O, Control Flow, Functions, Pointers, Dynamic Memory Allocation, Bitwise Operations, The Unix System Interface, Debugging with GDB and Valgrind.

August 2023 - December 2023

Data Structures – *Grade: A+*

- Topics: Lists, Stacks, Queues, Hash Tables, Trees, Graph Algorithms.

January 2023 - May 2023

Object Oriented Programming – *Grade: A+*

- Topics: Classes, Interfaces, Inheritance, Polymorphism, Error Handling, Debugging, Unit Testing.

August 2018 - May 2022

Course Electives – *Multiple Year Courses*

- **IB Computer Science:** Hardware, Networks, OOP, Java, C#, HTML.

- **Cybersecurity:** SQL basics, Cryptography, Firewalls, OS Security, Network Security.
- **Multimedia:** Microsoft Suite, Graphic Design using Photoshop and Adobe Illustrator.
- **Programming:** JavaScript, Python, SQL, Game Development.

Summer of 2017 - 2018

Mason Game & Technology Academy – *Student*

- **C# Programming:** Game Development in Unity.
- **Cybersecurity:** Securing Windows and Linux-based operating systems.
- **Cloud Computing:** IoT, Servers, AWS, Google Cloud, Azure basics.

Education

August 2022 - Present

George Mason University, Fairfax

- Honors College, Computer Science BS (In Progress)
- Current GPA: 3.98
- Regular Dean's List

August 2018 - May 2022

Edison High School, Alexandria – *Advanced Diploma*

- Advanced Diploma
- Regular A Honor Roll, GPA: 4.5
- Involvement: Future Business Leaders of America, Model United Nations, Muslim Student Association.