Michael Ibrahim

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Education

University of Washington, Seattle **June 2026**
Master of Science - Computer Science and Engineering *GPA: 4.0/4.0*

University of Washington, Seattle **December 2025**
Bachelor of Science - Computer Science *GPA: 3.85/4.0*
Bachelor of Science - Informatics

Coursework: Data Structures & Algorithms, Systems Programming, Computer Networks, AI/ML

Experience

University of Washington **August 2023 - June 2026**
Research Assistant *Seattle, WA*

- Developed and implemented a **TinyML** model using **TensorFlow** that enabled a micro-robot to classify and follow various insect species with **85%** accuracy leading to a **30%** improvement in task efficiency.
- Spearheaded the optimization of **real-time** data processing on constrained hardware, reducing model inference time by **40%** and enhancing the micro-robot's responsiveness in dynamic environments.
- Seamlessly integrated the TinyML model with embedded components using **C & C++**, enhancing the micro-robot's classification and tracking capabilities while reducing power consumption by **20%**.

University of Washington **March 2025 - June 2026**
Teaching Assistant *Seattle, WA*

- Led technical instruction and mentorship for **250+** students on networking and wireless systems, covering Internet architecture, congestion control, channel capacity, and error correction.
- Mentored students in hands-on projects and labs involving client/server systems, SDN, and software-based wireless experimentation, strengthening skills in debugging, performance analysis, and secure system design.
- Provided detailed assessment and feedback on programming assignments and projects, while supporting course operations through office hours, lab facilitation, and coordination of technical resources.

Amazon **June 2025 - September 2025**
Software Development Engineer Intern *Seattle, WA*

- Designed and implemented a scalable job application count system using **TypeScript** and **React**, integrating with AWS CDK for infrastructure-as-code provisioning and DynamoDB for data storage with millisecond response times.
- Developed a modular TypeScript service layer to interface with DynamoDB, encapsulating business logic for incrementing, retrieving, and managing job counters, achieving **99.99%** reliability and **100%** test coverage.
- Ensured compatibility with existing React infrastructure by reusing shared authentication and logging components, and integrating into Yarn builds, CI/CD pipelines, and monitoring systems.

Boeing **June 2024 - August 2024**
Software Engineer Intern *Kent, WA*

- Developed and maintained dynamic user interfaces utilizing **PHP** and **JavaScript**, enhancing user experience and interactivity for web applications.
- Collaborated with cross-functional teams to design and implement **RESTful APIs**, integrating backend **PHP** services with front-end **JavaScript** components.
- Conducted successful end-to-end testing of the interface with various networking components, ensuring seamless data exchange and robust performance across different environments.

NASA SURP **June 2023 - June 2024**
Research Intern *Seattle, WA*

- Engineered pulse width modulation software using **C** on the Nordic nRF5340 microcontroller to control the tail rotor speed of a coin-sized helicopter, enabling precise yaw control and helicopter heading.
- Developed software modules for seamless integration of button inputs with the nRF5340, prioritizing code maintainability and scalability, and efficiently utilized GPIO ports for enhanced system responsiveness and robustness.
- Optimized pulse width modulation software to reduce power consumption from **45 mA** to only **6 mA**, resulting in a **87%** increase in efficiency.

Technical Skills & Certifications

Certifications: ACTIVE SECRET SECURITY CLEARANCE
Languages: Python, C, C++, Java, TypeScript, JavaScript, Ruby, SQL, PHP, HTML, CSS, R
Libraries/Frameworks: TenserFlow, PyTorch, TinyML, React.js, Node.js, Zephyr RTOS, Nordic SDK, Ruby on Rails
Software & Tools: AWS CDK, Microsoft Azure, Linux/UNIX, ROS, Git, KiCad, nRF Connect, GNU Radio