Dong Jun Woun

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Education

UNIVERSITY OF TENNESSEE, KNOXVILLE Knoxville, Tennessee

Master of Science in Computer Science Aug 2024 – Dec 2025

- Cumulative GPA: 3.94 | Relevant Coursework: Computer Systems Organization, Reinforcement Learning (**Python**)

Bachelor of Science in Computer Science, Minors in Machine Learning & Cyber Security Aug 2020 – May 2024

- Cumulative GPA: 4.0 | Dean's List (Fall 2020 – May 2024) | Cook Grand Challenge Honors Program
- Relevant Coursework: Data Structures and Algorithms (**C++**), Systems Programming (**C**), Software Engineering (**React, Sass, Python**), Intro to Machine Learning (**Python**), Deep Learning (**Python**), Software Security, and Network Security

Skills

- Language: Bash, C, C++, Python, HTML, CSS, JavaScript, Sass, TypeScript;
- Frameworks & Tools: Linux, Git, Next.js, React, NoSQL, PAPI, MongoDB, NextAuth, Scikit-learn, Panda, LEAP;

Experience

INNOVATIVE COMPUTING LABORATORY Knoxville, Tennessee

Graduate Research Assistant Aug 2024 – Present

- Developing and refining features for PAPI, a tool for monitoring computer system performance (**Bash**, **C**).
- Added capability to disable automatic features, enhancing flexibility and user control on macOS.
- Streamlined testing procedure to focus solely on active hardware, boosting efficiency and accuracy.

AMAZON PROJECT KUIPER Seattle, Washington

Software Development Engineer Intern May 2025 – Aug 2025

- Architected a CI/CD pipeline for automated HITL testing, accelerating development and eliminating manual errors.
- Developed a Python/pytest automation framework for hardware diagnostics, log parsing, and HTML report generation.
- Deployed scalable infrastructure using AWS CDK and a containerized Docker environment for reproducibility.
- Designed a security framework for an automated code-signing service to protect the software supply chain.

OAK RIDGE NATIONAL LABORATORY Oak Ridge, Tennessee

Software Engineering Intern May 2023 – August 2023

- Improved the speed of data classification tasks by 3.5 to 4.5 times by implementing a machine learning algorithm (Support Vector Machine - SVM) on a quantum computer (**Python**).
- Leveraged the world's fastest supercomputer to enhance algorithm processing speed by 11.1x, showcasing scalability.
- Employed efficient software engineering techniques to optimize programs and ensure reliable performance analysis.
- Authored a research paper on the use of quantum technology in machine learning (https://arxiv.org/abs/2401.12485).

OAK RIDGE NATIONAL LABORATORY Oak Ridge, Tennessee

Software Engineering Intern June 2022 – August 2022

- Formulated a machine learning model (Support Vector Machines) for simulated quantum computers (**Python**).
- Trained model on traditional and quantum computers to establish reference benchmarks. (**Python, Scikit-learn**)
- Achieved high accuracy rates of 95.8% for the Iris dataset and 94.2% for the Digits dataset on classification tasks.
- Presented results to a diverse audience through presentations and reports to underscore research impact.

Projects

COMPASSIONATE MINISTRIES WEB APPLICATION Aug 2023 – May 2024

- Built a volunteer and event management system to strengthen operational efficiency for a non-profit organization.
- Implemented a dynamic search component (**Next.js**), enabling efficient record queries through URL parameters.
- Engineered view, create, and edit capabilities for volunteer management forms (**TypeScript)**.
- Integrated **NextAuth's Google authentication** for secure login, and added authorization checks on specified routes.

HOPFIELD DRONE Jan 2023 – May 2023

- Developed a computer vision system **(Python)**, recognizing markers up to 8ft away with up to 20% obstruction.
- Integrated Hopfield neural network pattern recognition machine learning techniques with image processing.
- Designed a drone control system for 11 pre-defined movements, including forward, backward, and flip.

VARI (UNIVERSITY OF TENNESSEE HACKATHON) Nov 2021

- Awarded Most Market Ready and Best Rookie Hack (78 Competitors).
- Assembled a web-based class schedule generator to streamline the scheduling process for university students.
- Constructed a scheduling algorithm, class search functionality, and class selection interface (**CSS**, **HTML**, **JavaScript)**.

Organizations

HACK4IMPACT May 2021 – Present

- Creating software for non-profit organizations to promote social good throughout the community.
- Resolving 3-5 issues per sprint, conducting code reviews, and pair programming sessions.
- Developing REST APIs, frontend components, and user interface features like authentication (**TypeScript**, **MongoDB**).
- Contributed to Raising a Voice, Sustainable Future Center, Compassionate Ministries, and the Maintenance team.