MARCUS ALEXANDER SCHUBERT

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Education

University of Michigan, Ann Arbor, MI *Graduation: May 2025*
B.S.E. Computer Engineering, Minor in Mathematics
GPA: 4.0/4.0
Coursework: Machine Learning, Operating Systems, Data Structures & Algorithms, Computer Organization, Discrete State Stochastic Processes, Probability, Linear Algebra, Differential Equations, Multivariable & Vector Calculus, Circuits
Extracurriculars: Michigan MagnUM Varsity Ultimate Frisbee, Taiwanese American Student Association

Skills

Programming Languages: Python, C/C++, SQL, GoLang, JavaScript, Rust, MATLAB
Frameworks, Libraries, Tools: Tensorflow, PyTorch, Pandas, Scikit-learn, React, React Native, Supabase, Git, Linux
Spoken Languages: English (Fluent); Mandarin, German (Conversational)

Honors & awards

- James B. Angell Scholar 2022, 2023
- AIME (American Invitational Mathematics Examination) qualifier 2018, 2019

Work Experience

- **Google**, Sunnyvale, CA May 2023 – August 2023
  Software Engineering Intern *GoLang, SQL*
  - Contributed workflow acceleration tool to the customer management system for Google Cloud Platform's Chronicle enterprise Cybersecurity service, saving 100+ partner engineer and customer experience engineer hours
  - Integrated a system into Chronicle's customer management server to track changes in customer provisioning details for 3 common customer classes; involved process scheduling, database design, and AST code parsing
  - Designed dashboard used by Google customer experience engineers and Google Cloud partners to visualize provisioning process as directed graph; presented results to 20+ engineers including Chronicle executives
- **Google**, New York, NY May 2022 – August 2022
  Software Engineering Intern *Python, SQL*
  - Designed and updated archival database using Python and SQL to track ownership of over 16000 tests as part of effort to strengthen integration test owner relevancy in Google Ads at Google's NYC office
  - Developed analyzer in Python establishing new test owning convention; warns engineers about invalid ownership tags
  - Built command line tool used by 100+ engineers to simplify ownership migration process, saving 2+ hours per engineer

Projects and Leadership

- **Multiprocessor Thread Library**, Ann Arbor, MI February 2024 – March 2024
  Programmer *C++*
  - Designed kernel level thread library on Unix supporting 50+ parallel CPUs; implemented monitors (mutexes, condition variables, semaphores) with FIFO ordering
  - Handled CPU booting, thread management, timer and inter-processor interrupts; performed context switching, managed shared state; utilized smart pointers and Resource Acquisition is Initialization (RAII) principles
- **TASA 2048 Game**, Ann Arbor, MI February 2024 – March 2024
  Solo Developer *Javascript, HTML, CSS, Firebase*
  - Developed responsive 2048 style web game with global leaderboard to advertise Taiwanese American Student Association Taste of Taiwan cultural event; attracted 1,000+ users
  - Built frontend with Javascript, prioritizing reliable and optimized user experience; implemented Firebase functions to receive GET and POST final score API calls, including proof of game-played logic to hinder leaderboard attacks
- **Biologically Inspired Robotics and Dynamical Systems Laboratory**, Ann Arbor, MI January 2023 – Present
  Quadcopter Team Lead, Research Assistant *Monte Carlo localization, Python, C++*
  - Quadcopter Team lead for fellowship-funded project on Multi Legged Robots and Animal Motion Research Team
  - Implemented particle filter to generate quadcopter state estimation based on IMU data, time of flight sensor readings, and dynamics model; Resampled particle guesses using cumulative weight partitioning
  - Contributed to a team refactoring C++ library to control Dynamixel servo motors using packet communication