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: Quantitative Investment Society, Michigan MagnUM Varsity Ultimate Frisbee, Michigan Pops Orchestra

Skills

Programming Languages: Python, C/C++, SQL, GoLang, MATLAB, JavaScript, Solidity, Swift
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

- **Biologically Inspired Robotics and Dynamical Systems Laboratory**, Ann Arbor, MI January 2023 – Present
  Quadcopter Team Lead, Research Assistant *SciPy, NumPy, Matplotlib, 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
- **Happening React Native App** October 2023 - Present
  Fullstack Developer *Javascript, React Native, Relational Databases, Git/Version Control*
  - Designed and implemented an interactive map app allowing students to crowd-source events on campus
  - Built React Native app with two developer team; hooked up Supabase backend; demoed prototype to 50+ students
- **Pipelined LC-2K Simulator, Linker, and Compiler** January 2023 - April 2023
  Programmer *C, Assembly*
  - Wrote program compiling LC-2K Assembly code files into ELF object files, linking them into single object file
  - Executed machine code using Pipeline Datapath, running up to 5 instructions per cycle, with register data forwarding
- **Predicting Drug-Kinase Binding Affinities using Convolutional Neural Networks** September 2018 – May 2020
  Independent Researcher *Keras, Tensorflow, NumPy, Matplotlib, Python, SQL*
  - Trained and tested convolutional neural networks with the Keras API to predict binding affinity between drug compounds and proteins, varying model structure and achieving an overall prediction accuracy of 73%
  - Gathered data from multiple sources and created an SQLite database to manage and clean data