Benjamin Steinig

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Experience

Microsoft
San Francisco, California | Software Engineer 2 *(August 2023 – Present),* Software Engineer Intern *(Summer 2022)*

- **Engineered large-scale system modernizations**, replacing legacy infrastructure with resilient, cloud-native architectures that improved maintainability and reliability across backend services handling **6,000+ requests per minute**.
- **Elevated security and authentication maturity**, driving adoption of modern token management and identity standards that strengthened access workflows and protected a product with **55M+ monthly active users**.
- **Pioneered AI-assisted development workflows**, leveraging LLMs to accelerate delivery and improve code quality, reducing boilerplate and surfacing bugs earlier in the development cycle.
- **Accelerated developer productivity and delivery velocity**, streamlining pipelines, cutting alert noise, and introducing automation that reduced on-call toil by double-digit percentages and freed engineers to focus on feature work.
- **Provided influential technical leadership**, guiding multi-team initiatives, mentoring peers, and scaling collaboration through retrospectives, demos, and **regular office hours with growing team adoption**.

Robert Bosch LLC – Driver Assistance
Plymouth, Michigan | Software Engineer Intern *(May 2021 – December 2021)*

- Developed unit-testing framework using CMake, Googletest and Conan package manager to improve verification and validation of driver assistance functions.
- Created Azure DevOps pipelines to automate execution of unit-tests across all platform builds from over 50 developers.
- Redesigned Python and Bash shell scripts to streamline and improve writability of build platform toolchain.

University of Michigan – Computing for Data Literacy
Ann Arbor, Michigan | Undergraduate Researcher *(September 2020 – May 2023)*

- Working alongside Dr. Mark Guzdial to develop programming tools to improve data literacy in social studies classes.
- Built Scalar Web platform using MySQL and the CodeIgniter framework to implement custom JavaScript hooks.
- Spearheaded creation of proprietary timeline generation tool using React & Firebase for use in high school classrooms.

Education

University of Michigan
Ann Arbor, Michigan | BSE in Computer Science (August 2020 – May 2023)

- Graduated Magna Cum Laude (GPA: 3.85)
- **Relevant Courses**: Machine Learning (EECS 545), Action & Perception – CV Research Seminar (EECS 598), Parallel Computing (EECS 587), Computer Vision (EECS 442), Web Systems (EECS 485)

Projects

P-CLAHE: Parallel Contrast Limited Adaptive Histogram Equalization (October 2022 – December 2022)

- Built a **real-time CUDA implementation of CLAHE** (P-CLAHE) to enhance underwater robotic vision, enabling autonomous submarine systems to run image preprocessing on limited GPU resources.
- Improved performance by applying **shared memory caching, loop unrolling, and warp-optimized parallelization**, cutting execution time and reducing memory overhead at scale.
- Delivered a **3–5x speedup over CPU and unoptimized implementations**, validating scalability across diverse image sizes and demonstrating reliability for deployment in constrained embedded environments.

Emoji Complete: Inferring Emojis Based on Sentence Meaning and Sentiment (January 2022 – April 2022)

- Developed an NLP model designed to produce emojis based on input sentences using Distil BERT embeddings and a two layer Bi-directional LSTM to derive a classification of top-5 most sentiment relevant emojis.
- Collaborated closely with a group of four students to develop a four month plan to collect datasets and design validation experiments which resulted in a final model which had 39% Top 1 and 78% Top 5 accuracy.

Technical Skills

- **Languages:** Ruby, Java, Typescript, Python, CUDA, C++, Bash
- **Web Technologies:** Ruby on Rails, Node.js, Next.js, GraphQL, HTML/CSS
- **Systems & Tools:** Git, Docker, Kubernetes, Linux/Unix, PostgreSQL, Redis