Matthew R. Hall

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WORK EXPERIENCE

Google *Software Engineer L3*   Irvine, CA — *2022 to Present*
- Presented a prototype of a document knowledge system leveraging embeddings stored in a Vector Database to increase accuracy in LLM-generated results. Prototype adopted by leadership for future work.
- Established a microservices architecture for a new product. Stood up CI/CD pipelines for the product.
- Executed a cross-team initiative to display app install banners on mobile devices. Deployed the feature in an experimental gradual rollout to users, increasing Chrome installs across the group. Results indicated a 25% install rate amongst users in the experiment, with no reduction in user engagement.
- Coordinated with partners to design, build and launch video publishing features for help center authors. Personally responsible for realizing the new features in our legacy Angular frontend.
- Owned the Localization and Translations area of our legacy product used by over 100 teams. Responsible for triaging and fixing bugs for a tool used to translate content between over 50 languages.

Capital One *Software Engineering Intern*   McLean, VA — *Summer 2021*
- Developed a full-text document search service API and user interface. Allowed users to retrieve documents based on filters or full text. System stores thousands of Word and PDF documents.
- Created the frontend UI in React and translated the frontend and backend codebases to Typescript.
- Implemented AWS Lambda functions with Elasticsearch and NoSQL stores behind a SQS queue. Led the creation of a "backend-for-frontend" service bridging our React frontend with the AWS services.
- Collaborated with fellow interns to plan sprints and guide the development of this search tool. Presented our progress frequently to product owners and iterated on collected feedback through Agile processes.
- Established skills for operating in a cloud-native environment.

Blubrry Podcasting *Software Engineering Intern*   Columbus, OH — *Summer 2020*
- Designed and implemented the push notifications service for Blubrry's mobile app using the Firebase Cloud Messaging SDK. Engineered a batching system to send notifications with a minimal number of API requests. Authored production database tables to store device tokens and notification settings.
- Introduced REST API endpoints backed by complex SQL queries with multiple security levels including SSO and OAuth 2.0. in a team of developers using Scrum and Agile project management techniques in Jira.

EDUCATION

The Ohio State University BS, Computer Science   *Class of 2022*
Relevant Coursework: Parallel Computing, Realtime Rendering, Artificial Intelligence, Computational Geometry

PROJECTS

Programming Language Project github.com/mh15/imp   *2021 to 2022*
- Created a statically-typed hobby programming language to explore the field of language design.
- Features included first-class functions, method overloading, closures and struct types. The language is statically typed with type inference and compiles to the JVM bytecode format.

The Woods wizaga.com/thewoods.html   Columbus, OH — *2019 to 2021*
- Developed a room-scale, multiplayer Augmented Reality (AR) experience with a team of faculty and students at Ohio State's Advanced Computing Center for the Arts and Design (ACCAD).
- Accepted to international conferences including SIGGRAPH 2021 and Currents New Media.

SKILLS

Languages: Typescript, Javascript, Python, Dart, C#, C/C++, SQL
Frameworks/Libraries: React, Angular, Protocol Buffers, Tensorflow, WebGL/OpenGL
Software: Unity, Git, Mercurial, Linux, Docker, CI/CD, Blender, Adobe Suite