1660 Madison Ave., Apt. 5F
New York, NY 10029

Sam Jayasinghe

650-382-7781
sj2564@columbia.edu

WORK

2019 **River** - Software Engineer Intern - New York, NY

- Reimplemented a named-entity aggregation algorithm using PostgreSQL, with materialized views to cache intermediate data, allowing the overall algorithm to run 70% faster, leading to an order of magnitude reduction in developer time required to iterate on the algorithm.
- Created Stackdriver metrics and alerts resulting in a greater than 50% reduction of the time required for on-call engineers to identify and respond to critical issues in the named-entity processing pipeline.
- Designed a relational schema for storing evaluation data and implemented a server for evaluating ranking algorithms that generates Precision at K and normalized discounted cumulative gain metrics for different iterations of an algorithm, allowing the organization to adopt a metrics-driven approach to iterating on the core search algorithms.
- Synthesized a dataset for document categorization and retrained a fastText model using the new dataset, achieving a 23% increase in precision over the previous model.
- Engineered an ML model training and deployment pipeline with a standard interface for generating training data from heterogeneous data sources, reducing iteration time for deploying new models from up to three weeks to less than one week.

2018 **Lana Education** - Software Engineer - Remote

- Formulated a hybrid approach to implementing chatbots where conversations are modeled as finite state machines with support for hooking-in ML models at different states, leading to the organization receiving an NSF grant.
- Designed a specification for a YAML-based format for modeling chatbot conversations, allowing non-programmers to deploy and test chatbots without requiring engineers.
- Implemented a chatbot engine using Node.js, exposing a REST API for managing chatbots and a WebSocket interface for real-time conversations.
- Developed a front-end web app using ES6 and React.js with support for users to interact with chatbots, and an admin interface for managing chatbots.

2016 **Telepath Technology Inc.** - Software Engineer - Remote

- Implemented a server for integrating and synchronizing user data from multiple Google APIs using Python, Redis, and Celery, allowing other services to have access to up to date user data.
- Architected an Objective-C based daemon using macOS Accessibility and other system APIs and a Chrome extension, for aggregating user events, allowing Telepath to perform user-intent inference based on behavioral signals.
- Reimplemented an existing Electron desktop application using ES6, React.js, and Redux, adding support for automated updates, multiple OAuth flows, and integration with other client-side software.
- Set up a continuous integration and delivery pipeline for multiple deployment targets including services running on Docket Cloud and a macOS desktop application, saving each developer up to 50 hours per month.

PROJECTS

- OCaml/JavaScript - Compiler and REPL with Hindley-Milner type inference for a Lisp-inspired language that compiles to JavaScript.
- Go - Sharded and replicated key-value store built on top of Paxos.

SKILLS

- Proficient languages: Python, JavaScript/Node.js, OCaml
- Familiarity with: Haskell, Go, C/C++, Objective-C, Java
- Other technologies: Docker, Linux, Git, React.js, Redux, MongoDB, PostgreSQL, Firebase, Redis, Neo4j, fastText, LLVM, GraphQL, Kubernetes, AWS, RabbitMQ, ElasticSearch

EDUCATION

Columbia University - New York, NY
B. A. Computer Science, GPA: 3.79 (Major)