Andrew Liu

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Education

UNIVERSITY OF MARYLAND, COLLEGE PARK　　　　　Sept 2013 - May 2017 | College Park, MD

- BS in Computer Science, minor in Statistics
- GPA: 3.97/4.0 — Magna Cum Laude
- ACES Cybersecurity Honors Program graduate
- President's Scholarship recipient

Experience

SCALE AI Software Engineer　　　　　　　　　　July 2019 – Present | San Francisco, CA

- Created a system to apply ML-generated semantic image segmentation predictions onto unlabeled images. Reduced overall time to produce ground truth semantic segmentation labels on images by 30%.
- Minimized external contractor churn by building a pipeline to proactively prepay trusted workers. The pipeline determines payment eligibility and infers proper wage calculation, sending over $10,000 per week to workers.
- Founding member of Scale's Machine Learning Infrastructure team. Designed and implemented orchestration service to route requests among all ML inference microservices via single library call. Integrated a frontend on top of the orchestrator to allow non-engineers to train models with custom hyperparameter specifications.
- Launched a public-facing dataset curation platform serving millions of images from various open source datasets.
- Tech stack: TypeScript, React, Python, MongoDB, PostgreSQL, NATS, Kubernetes, GraphQL

GOOGLE Software Engineer　　　　　　　　　August 2017 – July 2019 | Mountain View, CA

- Integrated risk-based re-authentication RPC services into various Google frontends, scanning over 400 queries-per-second of potential hijacker traffic.
- Maintained various internal authentication API microservices. Consulted for projects using these APIs, such as the Secure LDAP G Suite service and 2FA in Google Cloud virtual machines.
- Added UI support to Google login for sending Google Prompts to the iOS Gmail app. Tripled Google Prompt coverage for iOS users to 140 million users.
- Conducted A/B tests and authored Jupyter Notebooks that analyzed data on various authentication features. Improved pass rate of Google Prompts by 10% and overall success rate for sign-in by 5% through the aforementioned experiments.
- Migrated Google Authenticator's build system to Bazel and removed all of the app's internal dependencies. Released an open source version of the Android app on GitHub.
- Tech stack: Java, C++, Python, JavaScript, Soy, Guice, Dagger, Bazel, gRPC, Jupyter/Colab

DROPBOX Software Engineering Intern　　　　　　May 2016 – Aug 2016 | San Francisco, CA

- Investigated performance issues with Dropbox's web server. Fixed server inefficiencies, reducing the loading time of Dropbox's website homepage by 33% as a result of various optimizations.
- Implemented an end-to-end promotional flow on the Dropbox website to let users request team upgrades to Dropbox Business. Integrated with an RPC service to send email campaigns to Dropbox team admins.
- Tech stack: Python, React, Pxyl, Vagrant

GOOGLE Software Engineering Intern　　　　　　　May 2015 - Aug 2015 | Kirkland, WA

- Created an exploitability detection module in Breakpad (an open source crash reporting suite) that predicts whether a program crash occurred due to attacker exploitation. Implemented triage heuristics such as buffer overflow detection and binary permission checking.
- Pushed all internal changes upstream to the open source version of Breakpad.

US ARMY RESEARCH LABORATORY Security Researcher　　May 2014 - Aug 2014 | Adelphi, MD

- Coauthored a research paper for the USENIX security conference. The paper details the usage of code stylometry and machine learning as a means of authorship attribution for anonymous source code samples.
- Wrote a web crawler to scrape historical source code entries from the Google Code Jam programming competition. Cleaned up scraped source code samples to use as a corpus of training data.