

- Generalist software engineer, manager, and researcher
- Experience from planning to launch in multiple domains
- Ph.D. in formal methods

Experience

2012–Present **Staff Software Engineer**, *Google*, New York, New York

Tech Lead/Manager (TLM), Developer AI Research

Research and build AI-based developer tools.

- Initiated development and research on Google's first deployed ReAct agent program repair tool
- Worked across teams and functions to deploy APR in production, with thousands of fixes submitted
- Built evaluation sets, infrastructure, and metrics for program repair

Tech Lead/Manager (TLM), Speech Contextual Modeling

Improve speech recognition accuracy across surfaces using non-speech context, e.g., contact names.

- Managed research group (4 directs) on contextual modeling for E2E ASR
- Led team improving contextually-relevant phrase recognition in E2E ASR models
- Shipped novel techniques for increasing recognition accuracy
- Presented and published speech recognition research, both internally and externally
- Led area-wide migrations to new, state-of-the-art speech recognition architectures
- Deployed work in flagship products (Pixel, Assistant, Gboard, Cloud, Meet)

Tech Lead, Search Serving

Create and extend APIs for accessing structured knowledge bases in search and other products.

- Proposed, designed, led implementation of structured knowledge API serving 30k+ QPS since 2015
- Led design and development of domain-specific language for structured search result pages
- Proposed and implemented structured knowledge panel editor with live preview

Software Engineer, Crawler

Optimize crawling and indexing with new approach to predicting which URLs lead to identical content.

- Expanded initial proof-of-concept system to feature parity with previous, decade-old system
- Sped up system 5x (60 hours to 12) and reduced memory footprint 3x (36GB to 12GB)

Education

2012 **Ph.D., Computer Science**, *University of California, San Diego*

Title: Liquid Types

Supervisor: Ranjit Jhala

A novel approach to software verification through refinement type inference for C and OCaml.

2009 **M.S., Computer Science**, *University of California, San Diego*

2006 **B.S., Computer Science**, *Pennsylvania State University*

Skills

Domains Automated Speech Recognition, Type Systems, Program Analysis

Languages Python, C++, OCaml

General Engineering Management, Technical Writing