Noah Thompson

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Education

Cornell University, College of Arts and Sciences — *Fall 2018 - Spring 2022*

- B.A. Computer Science, with minor in Comparative Literature, Cumulative GPA: 3.823
- Relevant Courses: (*5/6xxx = grad*) († = *TA*) (* = *currently enrolled*)

CS 5414 — Distributed Systems	CS 6820 — Graduate Algorithms*	CS 6172 — Program Synthesis*
CS 4120 — Compilers	CS 4820 — Analysis of Algorithms †	CS 5114 — Network PL
CS 6110 — Programming Languages	CS 3110 — Functional Programming †	CS 4410 — Operating Systems

Skills

- **Languages:** Python, Java, Scala, Typescript, OCaml, C, HTML/CSS, p4, Unix scripting, Assembly (x86)
- **Technologies:** React, Git, SQL, Docker, Gradle, SDN/OpenFlow, parsers, CI/CD tooling, NumPy

Work Experience

Microsoft Software Engineering Intern — Summer 2021

- Architected migration from content stored in team codebase to a CMS & A/B testing platform with TypeScript and React
- Lead regular meetings with stakeholders in multiple distinct orgs, facilitating communication and maintaining docs
- Ran A/B experiments between pre/post-integration experience and also A/B tests between different content in CMS

Apple Software Engineering Intern — Summer 2020

- Worked on build management service used by ~2000 employees for collaborating on chip specifications
- Architected a CI/CD-tool-agnostic interface in Scala, using it to better integrate our system with TeamCity
- Utilized new interface to add new user features for live build monitoring: remaining time estimates, early stopping

Projects

APIP — Accountable and Private Internet Protocol — Spring 2021

- Implemented infrastructure for accountable and private internet protocol with hosts, verifiers, and accountability delegates
- Supported Accountability and Privacy using software-defined networking in p4, testing various network topologies

Multi-Paxos Key Value Store — Fall 2020

- Built a linearizable, fault-tolerant, sharded key-value store with atomic multi-key updates and dynamic load balancing

Xi Compiler — Spring 2020

- Designed custom optimizing compiler for Xi Language (Java-like), writing over 10k lines of Scala in team of four
- Implemented parsing, type-checking, and lowering syntax tree down through IRs into assembly
- Implemented various optimizations leveraging a data flow analysis including register allocations and loop unrolling

Cornell University Unmanned Air Systems — Fall 2018 – Present

- Software engineer for top undergraduate air systems team in the nation that builds a custom autonomous aircraft
- Implemented autonomous path planning using a RRT, optimized with parallelization, caching, and spatial indexing
- Created technical and cultural infrastructure for recruiting process in effort to reduce implicit bias in team recruiting

Network Program Synthesis Laboratory — Fall 2020 - Spring 2021

- Developed in OCaml to synthesize simple network programs by searching program space using SAT solver
- Worked on cache system to store simple and partial program solutions, allowing synthesis for more complex programs

Robotic Personal Assistant Laboratory — Summer 2019 - Spring 2020

- Worked on inverse kinematics to support hand tracking for a robot that could play cooperative card games with humans