Nicholas Chaloult

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Education

August 2017 — December 2021 (Expected)

Candidate for Bachelor of Science in Computer Science, *Georgia Institute of Technology*, Atlanta, GA.

- GPA: 3.88/4.00
- Threads: Intelligence, Info & Internetworks
- Selected Coursework: Data Structures and Algorithms, Database Technologies, Machine Learning, Computer Networking, Systems and Networks, Game AI, Intro to Info Security, Intro to Artificial Intelligence, Computer Organization

Experience

May 2021 — Present

Software Engineer Intern, *NCR Innovation Lab*, Atlanta, GA.

- Designed and implemented a data pipeline which ingests real-time data from edge compute devices, delivers them to dashboards and other services, and stores insights computed from those data
- Used **TypeScript** to build microservices which poll third-party **REST APIs** and consume from **WebSockets**, publish data to **Pub/Sub topics**, and transform and load data into **BigQuery**
- Created a dashboard with **React** and **TypeScript** which visualizes data from that pipeline in real time via **WebSockets**
- Containerized those applications and deployed them to an on-prem **Ubuntu Linux VM** with **Docker Compose** and **cron jobs**
- Onboarded 3 new developers via remote and in-person pair programming sessions, and by creating video tutorials

September 2020 — December 2020

Software Engineer Intern, *UKG*, Remote.

- Cut daily standup time in half by creating a dashboard with **React** and **TypeScript** that aggregates and visualizes metrics from **JIRA**, **TeamCity**, **PagerDuty**, and other internal sources
- Discovered and resolved a race condition between a **MongoDB** database and a **C#** back-end which caused dispositions to a job application's status to be discarded

June 2020 — August 2020

MLH Fellow, *Major League Hacking + Amazon Web Services Open Source*, Remote.

- Selected as **one of 150 Fellows from a pool of 20,000 applicants** to be a member of the Fellowship's inaugural class
- Used **TypeScript** and a **cross-compilation toolchain** to implement functionality in the **AWS Amplify CLI** that allows users to write, test, and deploy **Lambda functions** with **Swift**
- Wrote user-facing documentation and guides, as well as developer-facing design documents, with the AWS Amplify team

January 2018 — May 2020

Rise Up Undergraduate Assistant, *College of Computing, Georgia Institute of Technology*, Atlanta, GA.

- Led weekly webinars and monthly in-person sessions, explaining and demonstrating fundamental computer science concepts to groups of 30 Georgia high school students
- Helped organize and run the 2018 and 2019 **AP Bowl**, during which **over 300 Georgia high school students** took a mock AP Computer Science exam on Georgia Tech's main campus

May 2019 — August 2019

Software Engineer Intern, *DataScan*, Alpharetta, GA.

- Established pattern for new **REST API endpoints** in a **Spring Boot** application that perform lightweight existence/authorization checks for subresources
- Relocated frequently accessed, but rarely modified, information from an **Oracle database** to a **Redis** in-memory cache

Involvements

August 2019 — Present

GT Solar Racing, *Telemetry Team Member*.

- Redesigned a two-way telemetry message protocol to support 4x more message types to and from the vehicle
- Maintaining server written in **Go** that listens for and processes the vehicle's vitals in real time via a **TCP connection**
- Integrating **Grafana** visualization tool with **InfluxDB** to monitor the state of the vehicle as it races

Personal Projects

Command Line Interface

lancp, *A simple tool for easily transferring files between two machines on the same network.*

- Used **Go** to write a tool that is similar to **scp** and **rsync**, but more convenient to use
- Allows two devices to discover each other with passphrases sent in plaintext through **UDP broadcast messages**
- Sends file contents over a secure **TLS connection** after generating and exchanging a **self-signed certificate**

Discord Bot

HMM Mimicker, *Generates messages of the same vocabulary and sentence structure as a corpus.*

- Uses a **hidden Markov model** built from a customizable corpus to produce messages in a Discord text channel
- Used **Go** to implement a content generation model, and to build a bot which parses commands from users and posts messages
- Wrote a comprehensive **unit and integration test suite**. Containerized and deployed to **Cloud Run**

Skills and Attributes

Languages: TypeScript, JavaScript, Go, Java, Python, C, Bash, Swift, C#, HTML, CSS

Technologies: git, vim, React, Node.js, Docker, Amazon Web Services, Google Cloud Platform, GNU/Linux, PostgreSQL, Grafana, InfluxDB, Redis

Interests: Rust, Consensus algorithms, Distributed systems, Systems programming, Free and open-source software