Nicholas Chaloult

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Education

August 2017 — December 2021

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, Intro to Artificial Intelligence, Intro to Info Security, Computer Organization

Experience

February 2022 — Present

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

- Designed, and began implementing, an HTTP API that serves as an abstraction layer on top of a retail product advertisement engine. Supports multiple engines simultaneously in the same deployment
- Used **OpenCV**, **OpenPose**, **Python**, and **InfluxDB** to build a vision-based, real-time inference application that creates a "heatmap" visualization of foot traffic on a retail store's floor plan
- Conducted technical and behavioral interviews for intern and full-time candidates

May 2021 — December 2021

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

- Built a full stack application that collects insights and displays analytics about retail store customers. Consumes data collected from proprietary edge compute hardware via **REST APIs** and **WebSockets**, stores those data in **BigQuery**, and visualizes real-time and aggregated insights on a dashboard built with **React**. Containerized and deployed on an on-prem Linux machine
- Wrote comprehensive documentation about the application and how it was deployed, and handed the project off to other teams within the company to maintain
- Onboarded 3 new developers via remote and in-person pair programming sessions, and by creating video tutorials

June 2020 — August 2020

MLH Fellow, *Major League Hacking + Amazon Web Services*, 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

Involvements

August 2019 — May 2021

GT Solar Racing, *Telemetry Team Member*.

- Redesigned a two-way telemetry message protocol to support 4x more message types to and from the vehicle
- Maintained a server written in **Go** that listens for and processes the vehicle's vitals in real time via a **TCP connection**
- Integrated **Grafana** with **InfluxDB** to build a real-time dashboard for monitoring 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*.

- Wrote a tool with **Go** that is similar to **scp** and **rsync**, but more convenient to use
- Allows two devices to trustlessly 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, Python, Go, Java, Bash

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

Interests: Rust, distributed systems, free and open-source software, maintainable and testable software