

Nicholas Chaloult

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Education

- August 2017 — **Bachelor of Science in Computer Science**, *Georgia Institute of Technology*, Atlanta, GA.
December 2021
- 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 — **Software Engineer**, *NCR Innovation Lab*, Atlanta, GA.
Present
- Designed, implemented, and deployed an HTTP API that serves as an abstraction layer on top of a retail product advertisement engine. Added support for 2 different engines. Helped maintain production deployments for consumers inside and outside the company
 - Architected a pipeline for streaming real-time foot traffic data from up to 2,000 people at once in a retail store
 - 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 — **Software Engineer Intern**, *NCR Innovation Lab*, Atlanta, GA.
December 2021
- Designed and implemented a pipeline which ingests real-time data from proprietary edge compute devices, delivers them to dashboards and other services, and computes and stores insights
 - Used **Node.js** and **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 configured their production deployment on an on-prem **Ubuntu Linux** machine with **Docker Compose**
 - Onboarded 3 new developers via remote and in-person pair programming sessions, and by creating video tutorials
- June 2020 — **MLH Fellow**, *Major League Hacking + Amazon Web Services*, Remote.
August 2020
- 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 — **Rise Up Undergraduate Assistant**, *College of Computing, Georgia Institute of Technology*, Atlanta, GA.
May 2020
- 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 — **GT Solar Racing**, *Telemetry Team Member*.
May 2021
- 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, Amazon Web Services, Google Cloud Platform, Linux, PostgreSQL, Grafana, InfluxDB, Redis
Interests Rust, consensus algorithms, distributed systems, free and open-source software