Nicholas Chaloult

npchaloult@gmail.com
nchaloult.com
linkedin.com/in/nchaloult
github.com/nchaloult

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

June 2023 – Present **Software Engineer II**, *NCR Voyix*, Remote

- Orchestrated cross-team collaboration to containerize a fleet of legacy **Apache Samza** jobs. Designed experiments to verify their correctness despite poor test coverage. Helped transform our production deployment strategy, migrating from **Apache YARN** to **Kubernetes**
- Reduced CI pipeline execution times in a monorepo **from 50 minutes to less than 5 minutes**. Wrote custom logic with **git, sed, and awk** that only runs tests and builds artifacts for projects that were either directly changed or indirectly affected

October 2022 – April 2023 **Software Development Engineer**, *Amazon Web Services*, Remote

- Impacted by layoffs. Performance was not a contributing factor
- Reduced time to detect failed **Amazon SWF** workflow executions that perform long-running, bulk indexing operations on **Elasticsearch** clusters **from 75 hours to 1 minute**, dramatically improving the user experience for larger customers
- Identified an opportunity to scale down our **Elasticsearch** cluster configuration in a region with an unusual traffic pattern. Verified it would not introduce an operational risk, presented a plan of action, and executed, **saving ~$14,000 per year**
- Served as the primary oncall for the AWS IoT Fleet Indexing service for multiple rotations. Promptly mitigated operational events of all shapes and sizes, performed root cause analysis, and collaborated with other teams to conduct corrective action

February 2022 – September 2022 **Software Engineer**, *NCR Corporation, Innovation Lab*, Atlanta, GA

- Used **OpenCV**, **OpenPose**, **Python**, and **InfluxDB** to build a vision-based inference application that powers a real-time "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 Corporation, Innovation Lab*, Atlanta, GA

- Architected and developed a full stack application that collects insights and displays analytics about the behavior of a retail store's customers. Consumes real-time data streams from proprietary edge compute devices. Identifies over 3,000 unique customers per week in a production environment. Built with **WebSockets**, **React**, **BigQuery**, and **Google Cloud Pub/Sub**
- Onboarded 3 new developers to the project via remote and in-person pair programming sessions, and by creating video tutorials

June 2020 – August 2020 **MLH Fellow**, *Major League Hacking*, 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 **AWS Lambda functions** with the **Swift** programming language and runtime

Involvements

August 2019 – May 2021 **GT Solar Racing**, *Telemetry Team Member*

- Redesigned and implemented a wire protocol for telemetry messages 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

- **lancp**, a command-line interface written in **Go** for easily transferring files between two machines on the same local network. Similar to **scp** and **rsync**, but more convenient to use. Allows two devices to trustlessly discover each other via passphrases in **UDP broadcast messages**. Sends file contents over a secure **TLS connection** after generating and exchanging a **self-signed X.509 certificate**

Skills and Attributes

Languages: Java, TypeScript, JavaScript, Python, Go, Bash

Technologies: git, Linux, Docker, Amazon Web Services (AWS), Google Cloud Platform (GCP), PostgreSQL, DynamoDB, Elasticsearch, React, Node.js, LaTeX

Interests: Maintainable and testable software, consensus algorithms (Raft), distributed systems testing tools (Jepsen)