# NICOLAS MITCHELL

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https://nico-mitchell.com

## About Me

**Nicolas Mitchell** is a software engineer focused on networking, automation, dev-ops, and distributed system design. When he's not working, he can be found in the climbing gym, gaming, reading, cooking, or contributing to open-source projects.

## Education

**B.S. - Computer Science and Engineering**
University of Louisville - May 2020

## Skills

**Areas of Expertise:** Cloud Infrastructure, networking, distributed systems, containers, concurrency, CI/CD, architecture
**Programming and Scripting Languages:**
Go, C, JavaScript, C++, Bash, Java, Python, Rust
**Other Technologies:** AWS, Kubernetes, Docker, Ansible, Linux, SQL and NOSQL Databases, React, Git, Splunk, Prometheus, Terraform

## Open-Source Contributions

Godot Engine
Zellij
Istio
Kubernetes

## Hackathons

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|---|---|
| FirstBuild Hack the Home | 2017, 2018 |
| VandyHacks | 2017 |
| DerbyHacks | 2018 |

## Hobbies and Talents

**Spoken Languages:** English (fluent), Spanish (fluent), Portuguese (intermediate)
**Music**: Guitar (12 years), Singing (in a band), production (making beats with friends)
**Fitness**: Indoor rock climbing (bouldering), weightlifting

## Work Experience

**Senior Software Engineer** — November 2022 – Present
**Software Engineer** — December 2021 – November 2022
*Splunk* — San Francisco, CA
- Led expansion of our service into new regions by planning, delegating, and implementing provisioning and configuration changes in terraform, AWS, and Kubernetes
- Cut development time of new data source integrations in half by redesigning Python code framework to minimize complexity
- Architected and implemented new asynchronous job scheduler using Redis
- Designed and implemented Prometheus and Splunk alerts and dashboards
- Fixed blocking distributed processing design problem by re-architecting code to parallelize jobs using SQS Queues in AWS Lambda
- Provisioned new AWS resources in multiple environments using Terraform and created reusable deployment templates
- Used jsonnet files to templatize and automate Kubernetes deployments

**Software Engineer – Observability** — September 2020 – December 2021
*SAP* — Palo Alto, CA
- Implemented JWT-based OAuth server for an automated workflow scheduler using an existing LDAP server
- Created visibility into critical production systems by building Splunk dashboards
- Ensured safety of production deployments by implementing deployment tests
- Designed CI/CD pipelines and automated deployments using Ansible

**Software Engineering Intern – Data Platform** — June 2019 – August 2019
*Red Ventures* — Fort Mill, SC
- Developed backend microservices in Golang for an internal data pipeline software
- Facilitated new software features by writing SQL database migrations
- Allowed for data connections between third party data providers like Segment and internal data pipeline by building Golang plugins
- Improved UX and integrated new components to web frontend with ReactJS

**Visiting Research Assistant** — January 2019 – May 2019
*University of Southern California – Information Sciences Institute* — Waltham, MA
- Researched and developed a system component for a DARPA funded project to automatically detect and respond to phishing emails
- Developed new features and fixed bugs for a Python natural language processing framework

**Software Developer Intern** — January 2018 – April 2018
*El Toro* — Louisville, KY
- Wrote an internal API in Go to schedule tasks using AWS Step Functions
- Facilitated integrations for various databases including MongoDB, Aerospike, and PostgreSQL by creating and implementing a common interface
- Sped up data ingestion script by over 10x by implementing a worker pool for concurrent processing

**Student Tutor** — August 2017 – April 2020
*University of Louisville Resources for Academic Achievement* — Louisville, KY
- Tutored students in Python, C, C++, Data Structures and Algorithms, and other CS topics

## Applied Experience

**Embedded Systems**: Interfaced and displayed vehicle ECU data with an Arduino and LED screen, built a self-orienting solar panel using an Atmel microcontroller, built a touch-sensor game on a Raspberry Pi.
**IoT/Serverless**: Designed, developed, and deployed an IoT pilot project that ran sensor data through AWS IoT to an Aurora Serverless database cluster using a lambda function.
**Networking/Architecture**: Managed microservices in an AWS VPC separated into public and private subnets. Included components were a database, web API, and web client. Integrated web API and client with Auth0 SSO.
**Distributed Systems**: Developed networked chat room in Golang using a custom TCP protocol, deployed on AWS Elastic Containers. Developed naïve implementation of a gossip protocol deployed on a network of docker containers.