Harsh Gupta

📍 Palo Alto, CA

Software Engineer @ Tesla
4 years of experience
harshgupta2204@live.com
Portfolio: harshgupta.dev

harsh2204 ∞
harsh2204 ⌂
guptah4 in

Skills:

Python 5 years · Expert   **Web Development** 6 years · Advanced   **React** 5 years · Expert   **Typescript** 3 years · Expert

Kubernetes 2 years · Intermediate   **GO** 3 years · Advanced   **Linux** 4 years · Advanced   **C** 2 years · Intermediate

C++ 2 years · Intermediate

Experience

Tesla tesla.com   Jun 2023 to Present

Software Development Engineer - Infrastructure R&D (Cloud Platform) Palo Alto, CA

- Led frontend development and contributed to the Tesla Private Cloud platform, significantly reducing the company's cloud expenditure by transitioning the cloud footprint in-house, in deploying hardware on the order of $5B.
- The platform played a crucial role in controlling the company's cloud spend, reducing reliance on external cloud vendors like AWS and Azure, and saving hundreds of millions of dollars.
- Developed multiple web applications using NextJS to enhance developer experience and speed up onboarding for new developers.
- Worked extensively on backend development using Golang, creating and designing web APIs in a microservice architecture.
- Created an admin-only dashboard for core services within a week using NextJS and React, with beta testing initiated within two weeks.
- Utilized various technologies across service verticals, such as Clickhouse for the monitoring stack database and Prometheus for alerts and monitoring.
- Implemented comprehensive documentation services to streamline code use-case documentation and iteration for developers using MDX and Nextra.
- Mentored and converted interns into full-time positions, demonstrating leadership and fostering talent development.

- Spearheaded frontend initiatives using NextJS and server-side rendering, leveraging the latest patterns and conventions to improve the overall developer experience.
- Achieved substantial cost savings by transitioning cloud services in-house, resulting in hundreds of millions of dollars in reduced external cloud vendor bills.

Tesla tesla.com   Oct 2021 to Sep 2022

Core Infrastructure Software Engineering Intern Fremont, CA (Remote)

- Added GitHub Support to existing Python monolith of a devops-bot, while also refactoring and simplifying the code, and wrote documentation with visualizations.
- Developed permission management and access request automation scripts using Python.
- Performed alternative market analysis for software tools and performed internal surveys and beta-testing for prospective software tooling to improve existing workflows.
- Created a licensing report generator for GHE Admins to support clustered instances, and aggregate the correct licensing figures across various instances for the report.
- Developed a GitHub user cleanup tool in Python to suspend inactive AD users, a global team management tool using Python.
- Created a GitHub organization tracker and a GitHub-JIRA PR linker using NodeJS and Docker.
- Wrote disaster recovery testing scripts for various engineering applications, using Bash, Docker, Selenium, and Python.
- Built a Web-App using the T3 stack, within a week for an internal engineering-apps Documentation portal and which was later released in two weeks.

- Worked on features for a large scale internal web app project with a Django + React TypeScript stack, and specifically implemented Frontend designs using the TDS and Tailwind.

  - Reduced overall human involvement in processing access requests for internal engineering tools by automating the process using modular approach in python along with Jenkins.
  - Helped improve reporting mechanisms for tool monitoring jobs using bash and python, to improve the fault detection/retention in worst-case scenarios

IBM ibm.com   May 2019 to Aug 2020

Backend Software Engineer and QA Systems Manager Markham, ON

- Revived and revamped the QA infrastructure, both software and hardware, for the DB2 install team.
- Authored the automation scripts to speed up deployment of new hardware in various environments using Python, POSIX bash, and Playbook by Ansible.
- Wrote a validation failure classifier and tracker from the ground up, to automate and speed up the failure investigation process using fastText and other in-house text classification techniques, all backed by a Django back-end.
- Started a side-project on synthesizing audio books by splicing the input text in the right way so the TTS engine creates a flowing audio book. Actively looking for solutions to the problem of pronunciation of names for a better audio book experience
- Designed and proposed a transformer-based documentation generator to resolve simple customer issues quicker.

  - Software Automation
  - Failure Classification and Tracking
  - Better Audiobook Synthesis

Education

McMaster University mcmaster.ca   Sep 2017 to May 2023

Bachelor's of Engineering, Software Engineering

Projects

shaderlab

🌐 shaderlab.harshgupta.dev/

An AI playground for creating, and learning about shader programing, leveraging more than 10 of top most models available through a BYOK model.

Golang, Typescript, Three.JS, Golang, Gorm, IDB, MinIO, Postgres, NextJs, React

Trinkets

🌐 trinkets.harshgupta.dev/

A collection of hand-crafted and AI-assisted artifacts created by me, including a regex crossword game, music visualizer, and more

HTML, CSS, Javascript, Three.JS

socketjoy

🌐 gamepad.harshgupta.dev   ⊙ github.com/harsh2204/socketjoy

(2020) A webapp that turns your smartphone into a game controller

HTML, JavaScript, CSS