Anup Sanjeev Patel

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Education

University of Illinois at Urbana-Champaign *May 2022*

Mathematics & Computer Science *3.7/4.0*

- Coursework: Data Structures, Database Systems, Machine Learning, Graph Theory, Linear Algebra, Numerical Analysis, Prob & Statistics, Combinatorics

Experiences

Global Mobility Services *September 2023 – Present*

Software Engineer *Schaumburg, IL*

- Set up and managed private cloud infrastructures using AWS which include VPC, EC2, S3, CloudFront, EFS, RDS, DynamoDB, Lambda, Route53, CloudFront, Cloud Watch, Cloud Trail, Cloud Formation and IAM.
- Built LLM powered internal web application for client to summarize secure documents, leveraging OpenAI API, NLP techniques, and Next.js API Routes.
- Developed a secure, graphical user interface for client to manage and deploy Terraform configurations to multiple clouds (AWS, Azure, GCP) from a single platform. Implemented role-based access controls and audit logs to enhance security.
- Implemented continuous integration and continuous deployment pipelines using GitLab, improving code quality and deployment speed.
- Led project to integrate endpoint security solutions across the enterprise, including anti-virus, anti-malware, and intrusion detection systems (IDS), to provide layered security defenses and improve overall security posture.
- Created a Google Chrome Extension for a dental organization to automate the filling of insurance claim forms. Implemented strict data handling and privacy measures to protect sensitive information, achieving a process efficiency increase of over 90%.
- Led Scrum ceremonies including daily stand-ups, sprint planning, and retrospectives to ensure efficient project management and delivery
- Worked closely with stakeholders to translate business requirements into secure, reliable solutions that enhance user satisfaction.

TuSimple *August 2022 – August 2023*

Software Engineer - DevOps *Tucson, AZ*

- Developer for vehicle infrastructure team, responsible for ensuring operational efficiency and improving automation through continuous integration, automated testing, and deployment strategies to optimize project workflows and ensure production quality.
- Improved asset observability across the organization by developing an internal infrastructure management web application used to manage vehicles' hardware/software configurations and schedule updates for the fleet.
- Reduced the time to validate an autonomous vehicle was ready for testing by over 90% through developing a vehicle validation pipeline, a multibranch pipeline used to validate vehicles, trucks or mapping vehicles, where ready for production/test trips, utilizing Jenkins, Cypress, JS, and Python.
- Led weekly meetings to review root cause analysis of support tickets and triage complex network/system issues reported by the autonomous vehicle help desk (AVHD), improving workflow efficiency by creating a toolset of Python and Bash scripts to resolve new and current issues faced by AVHD.
- Collaborated with test engineers and QA teams to provide in-depth documentation, investigate and create bug reports, provide relevant data to remote teams, and coordinate hotfixes for current issues.
- Developed IaaS templates, provisioning on Linux machines, and deploying features using Ansible and Ansible Tower, improving maintainability and scalability of infrastructure management of the fleet.
- Ensured minimal downtime and successful implementation for fleet software deployments, from testing to rollout, by leveraging Docker and Docker Registry to securely store and distribute validated docker images.
- Communicated service level objectives with 50+ internal stakeholders, directors, PMs, developers, QAs, electrical engineers, and other technologists across the company

Codakid *April 2021 – April 2022*

Programming Instructor *Scottsdale, AZ*

- Mentored and led over 30 young adults(ages 9-16) on real projects to develop their interest in programming.
- Adapted teaching methods based on each student to drive interest, effectively transfer knowledge, and motivate them through the courses.
- Developed supplemental courses introducing data structures and algorithmic programming questions for advanced students to learn OOP.
- Led students through one-on-one game development courses utilizing Python, Java, Lua through a remote environment during the height of COVID.
- Courses progressed through learning with Scratch by MIT, PyGame development, Lua coding in Roblox Studio, creating mods with Java in Minecraft and 3D game development with Unreal Engine.

Projects

Trauma Chatbot App | React Native, Next.js, Node.js, Google Cloud Platform

- Developed a full-scale application in React Native for users to have their own AI assistant customized to discuss issues related to emotional trauma.
- Created an API server to direct prompts to a prompt engineered Gemini language model and to handle user chat history.
- Utilized GCP offerings including Firebase and Firestore to store sensitive user information and user credentials.

MNIST Nets | Pytorch, Python

- Designed and implemented Variational Auto-Encoder and Generative Adversarial Network models trained on the MNIST dataset.
- The VAE learned to encode and decode handwritten digit images, while the GAN learned to generate new handwritten digit images.

Personal Voice Generator | JS, HTML, CSS, Node.js

- Utilized the Replicate API along with the 'tortoise-tts' model to build an interface to clone a user's voice and generate speech from text.

Hospital Bed Availability | Java, Python, SQL, GCP

- Created an application using Android Studio, a GCP hosted MYSQL database, and Python, to propose a solution that increased efficiency and observability of hospital resources during the COVID pandemic.

Ticket Finder Bot | Python, Selenium, Azure VM

- Created a Discord Bot to scan for specific tickets on certain websites, and once a desired ticket was found sends the reserved ticket URL to a Discord server for the user to receive.

Skills

Python (Pytorch, SymPy, Pandas, Keras, TensorFlow, SciPy, PyTest, Jupyter Notebooks), Front End Development, Java, Javascript, React.js, React Native, Node.js, Express.js, Angular.js, Next.js, Swift, Backend Development, C/C++, SQL, NOSQL, PostgreSQL, Cloud Computing (Amazon AWS, Microsoft Azure, Google Cloud GCP), Jfrog, Artifactory, Docker, Kubernetes/K8s, Prometheus, Git, Jenkins, Cypress, Selenium, Ansible, CFEngine, Puppet, Terraform, Unix/Linux, Windows, Jira

Certificates

AWS Certified Solutions Architect, CompTIA A+, CompTIA Network+