Himavanth Karpurapu

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Professional Experience
WINIT TECHNOLOGY PRIVATE SOLUTIONS LIMITED | *Software Engineer Intern* **| Apr 2023 – Aug 2024**
- **Situation** The company needed to migrate its infrastructure to the cloud with minimal downtime and manual intervention.
- **Task:** Automate cloud infrastructure provisioning and optimize resource allocation.
- **Action:** Used Terraform to automate **AWS** infrastructure provisioning, managed services like **EC2 instances, RDS, S3, and Lambda**, and implemented auto-scaling to optimize costs. Designed CI/CD pipelines using Jenkins and GitHub Actions and containerized applications with Docker for deployment on Kubernetes.
- **Result:** Reduced cloud migration time by 25%, increased automation by 20%, and cut computational costs by 30%.

UDAAN AI AND ML RESEARCH LAB, KMIT | Undergraduate Research Assistant | Mar 2020 – Aug 2022
- **Situation**: Doctors needed a faster and more accurate way to detect cancer from CT scans.
- **Task**: Develop a full-stack web application for medical imaging analysis.
- **Action**: Built the frontend using **React.js**, backend with **Flask**, and deployed CNN models using **TensorFlow Serving** and **Docker**. Created data preprocessing pipelines with **Python and OpenCV**and integrated real-time inference capabilities.
- **Result**: Achieved 97% accuracy in candetection, reduced diagnosis time by 40%, and improved training efficiency by 15%.

Project Experience
Peer Support Website (Real-Time Distributed System) | *Jan 2024 – Present*
- **Situation:** Users needed a platform to connect and communicate in real-time.
- **Task:** Build a real-time peer support platform using WebSockets and SignalR.
- **Action:** Deployed the application on **AWS Elastic Beanstalk**, used **RDS** for storage, and implemented **ElastiCache (Redis)** for distributed caching. Designed a Power BI dashboard to visualize user engagement metrics.
- **Result:** Improved system performance by 25% and enabled real-time communication for over 1,000 users.

Distributed Task Scheduler with Kubernetes and C# | *Feb 2024 – Aug 2024*
- **Situation**: Needed a scalable solution to manage and distribute tasks across multiple nodes.
- **Task:** Build a distributed task scheduler using C# and .NET Core.
- **Action:** Deployed the scheduler on **Amazon EKS (Elastic Kubernetes Service)**, used **Amazon SQS** for task distribution, and implemented Prometheus/Grafana for monitoring. Designed a REST API for task submission and status checking.
- **Result:** Achieved high availability and scalability, with a 30% improvement in task execution efficiency.

AI Movie Recommendation System with Real-Time Analytics | *Aug 2024 – Dec 2024*
- **Situation**: Needed a scalable recommendation system with real-time analytics for user engagement.
- **Task:** Develop a recommendation system using collaborative filtering and deep learning models.
- **Action:** Built scalable data pipelines with **Amazon Kinesis** for streaming and **EMR (Spark)** for batch processing. Deployed the system using Kubernetes and designed an admin dashboard to visualize user engagement metrics.
- **Result:** Improved recommendation accuracy by 20% and enabled real-time analytics for over 10,000 users.

Recognition
- **Stanford TreeHacks Winner 2024 – Awarded for developing an AI-powered privacy policy summarizer.**
- **Top 4 Finalist – Mozilla Hackathon 2024 for creating a real-time collaborative platform using distributed systems.**
- **5-star on Codechef.**
- **Research Associate for Nada Attar at SJSU from Dec 2024 - Present**

Education
San Jose State University, San Jose, CA, USA. Master of Science in Computer Science | Aug 2024 – May 2026| **GPA-4.0**
Jawaharlal Nehru Technological University, Hyd, India. Bachelor of Technology in CSE | Aug 2019 – Aug 2023 | **GPA-3.9**
Technical Skills
Python, JavaScript, Java, C++, Go, C#, .NET, React.js, Flask, FastAPI, **AWS**, CNNs, GANs, Hugging Face Transformers, PyTorch, TensorFlow, Terraform, Docker, Kubernetes, Jenkins, GitHub Actions, **AWS DevOps**, Kafka, Spark, Power BI, Tableau, Prometheus, Grafana, **Amazon RDS**, MongoDB, Firebase, **Amazon Aurora (SQL-compatible)**, Redis, Visual Studio, Microsoft Teams, GitLab, GitHub, OpenCV.