VISHWA GOPAL

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EDUCATION

New York University (NYU), Master of Science in Computer Engineering ***Expected Graduation* – May 2025**
Relavant Coursework: *Data Structures & Algorithms, Database, Machine Learning, Deep Learning, Data Analysis*

SKILLS

Programming: Python, R, C, C#, C++, Java, JavaScript, TypeScript, Rust, Golang
Frameworks & Technologies: PyTorch, Tensorflow, SQL, Hadoop, Hive, MongoDB, DynamoDB, GraphQL, AWS, GCP, CUDA, Triton, OpenXLA, LLVM, MLIR, NoSQL, Ansible, Spring, Junit, MySQL
Web Development: Angular, React, Node.js, React.js, Flask, JQuery, HTML, CSS, Bootstrap, Springboot, AJAX
Tools: Git, Docker, Kubernetes, Jenkins, JIRA, Confluence, Kibana, Grafana, Kafka, Redis, Cassandra

EXPERIENCE

Software Engineer | Capgemini Technology Services **Dec 2020 – Jul 2023**

- Led the design and development of 3+ end-to-end enterprise-level **microservice** applications on distributed systems, improving real-time network testing and monitoring for Viavi Solutions, resulting in enhanced performance & scalability.
- Designed and implemented **scalable APIs** and background workers using **SpringBoot**, and leveraged **EC2** & **DynamoDB** to build web services for network quality assurance and performance monitoring, processing over **10 million** data points per day, reducing system latency by 25%, and optimized resources by utilizing **Redis** for caching.
- Developed **Angular** User Interfaces to support real-time data visualization and monitoring, improving user response time by 30% and streamlining user interactions with network monitoring tools. Integrated **Kibana** for log analysis and performance monitoring, providing improved visibility into system health and reducing debugging time.
- Led the testing and monitoring of APIs and background services, identifying and resolving **15+ critical bugs** in production environments, improving system reliability by 26% and enhancing the efficiency of network performance monitoring. Used **Kafka** to streamline messaging between services for real-time data streaming and event handling.
- Coordinated with **clients** and stakeholders to ensure seamless delivery of distributed systems, utilizing sound judgment and resource management to address complex customer needs and improve satisfaction in an **agile** environment.
- **Mentored** 4 new hires on computing principles and debugging techniques, improving team productivity and code reliability through knowledge sharing and a collaborative approach.

ML Intern | IBM **June 2020 – Oct 2020**

- Engineered CNN models using PyTorch for classifying 10,000+ lung X-ray images, improving COVID-19 detection accuracy by 20% for **IBM PowerAI Vision**. Leveraged **NVIDIA GPUs and CUDA** for optimizing compute capability, enhancing model performance and multi-node distributed training reducing training time by 30%.
- **Optimized database queries** by 30% and **automated 15+ monitoring tasks**, leveraging the computer architecture of **IBM AC922 servers** to improve database performance and reduce latency in high-demand environments.
- Contributed to software **deployment and documentation**, streamlining 10+ hardware configurations and detailing ML modeling processes to ensure seamless integration with cloud-based systems, **reducing deployment time** by 20%.
- Collaborated with **customers** and **team leads** to optimize AI model deployment, effectively communicating technical insights and aligning deliverables with client expectations, enhancing partner relationship management.

PROJECTS

HealthSync: Personal Health & Wellness Assistant – AWS, Node.js, Flask, AWS Cloud **Jan 2024 - Ongoing**

- Developed a full-stack web app to help individuals track and analyze their health journey using **React UI, AWS, Java REST API**-based Lambda backend, integrating **OpenAI API** to deliver personalized fitness and nutrition advice.
- Created statistical analysis models on **AWS SageMaker** for predictive analytics and deployed real-time health insights.

Probability of Default Prediction Model for Firms – *Python, NLP, Scikit-Learn, AWS* **Oct 2024 – Dec 2024**

- Designed and implemented a scalable data processing pipeline in Python to preprocess and transform a dataset of over **10 million rows**, integrating **financial metrics** and custom feature engineering techniques for enhanced accuracy.
- **Built, deployed**, and tested a **robust decision tree** model as a REST API using Flask, hosted on **AWS Lambda**, and integrated with **S3** for secure data storage and seamless retrieval.

NAS-SegNet – Python, Pytorch **Feb 2024 – May 2024**

- Constructed a Neural Architecture Search (NAS) framework for medical image segmentation using PyTorch, targeting nuclei segmentation. Integrated **NVIDIA GPUs and CUDA** to improve computational performance and model efficiency.
- Applied **quantization-aware training (QAT)** and **model pruning** to reduce the model size by 40% while maintaining high segmentation accuracy.

LEADERSHIP & INVOLVEMENT

- Awarded **Best Outgoing Student** for publishing 25+ patents in AI and cloud platforms, demonstrating advanced problem-solving and critical thinking skills.
- **National Winner** at the **IBM** Berkeley-Andhra Smart Village Open Innovation **Hackathon** by developing an AI cloud app that empowered uneducated villagers to expand their businesses globally.