Anusha Lavanuru

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Education

Columbia University, New York   Sept 2023 - Dec 2024
- Master of Science, **Computer Science**
- **Courses:** ML, NLP, Algorithms, Databases, UI Design, VR/AR, Graphics, Human Computer Interaction, Data Visualization
- **Teaching Assistant:** UI Design (Spring '25 & Fall '24), Introduction to Databases(Spring '24), Computing in Context(Fall '23)

Skills

Languages:	Python, Go, Java, C++, C#, React, Next.js, TypeScript, Node.js, Express.js, JavaScript
Databases:	MySQL, PostgreSQL, DynamoDB, MongoDB, Redis, Milvus, InfluxDB
Tools:	FlaskAPI, Gin, Spring Boot, Figma, AWS, Kafka, GraphQL, Docker, Kubernetes, Jenkins, Git, Unity
Libraries :	OpenCV, Pandas, NumPy, Scikit, Matplotlib, TensorFlow , PyTorch, NLTK

Work Experience

Backend Engineer | Arklex.ai, New York   Feb 2025 - Present
- Built an **enterprise** version of the Arklex AI platform by extending and integrating core product **frontend, backend, and chatbot etc.** repositories (**React, Next.js, Golang**), enabling modular and client-specific **SaaS** deployments.
- Created a production-ready **AMI** by provisioning frontend, backend, bots and databases (**MySQL, Redis, Milvus**) within a lightweight **K3s** Kubernetes cluster on **AWS EC2**, enabling seamless deployment to enterprise private clouds
- Collaborated on cross-region infrastructure migration from **ap-southeast-1** to **us-east-1**, covering services like **S3, ECR, RDS, ElastiCache**, which reduced latency by **50ms** and lowered operational costs by **15%**

Software Development Engineer Intern | NomadFi, New York   May 2024 - Sept 2024
- Engineered modular React components for a **fin-tech** platform, including the homepage, dashboards etc., utilizing advanced state management with **React Hooks**, **Context API**, & **Redux** to deliver a responsive **UI/UX**
- Built an **OCR**-based invoice processing system in **Python**, automating the extraction of unstructured financial data, transforming it into a relational database format cutting manual processing time by **60%**
- Integrated a backend pipeline with **Java, Spring Boot**, optimizing **PostgreSQL** data retrieval, trimming latency by **25%**
- Contributed to blockchain-based **RWA tokenization** by designing **Ethereum** based architecture, integrating APIs (**Plaid, Teller**) for financial health assessment, and aligning features with trade finance standards

Software Engineer | Shure Incorporated, India   Aug 2021 - Aug 2023
- Built and deployed RESTful APIs with **Flask (Python)** to streamline audio analytics data pipeline for Shure Cloud, leveraging AWS (**DynamoDB, S3, MSK**). Also optimized data flow and integration, slashed processing time by **20%**
- Designed and implemented scalable software frameworks using **Python** and **Selenium**, automating **100+** test cases and reducing manual efforts by **70%**, significantly enhancing software quality
- Developed back-end services and **CI/CD pipelines** using **Python** and **Jenkins**, streamlining build, testing, and release workflows, reducing deployment errors by **40%**, and improving delivery timelines by **35%**
- Optimized product workflows, reliability by driving automation and addressing bottlenecks in **Agile** cross-functional teams

Projects

Image Enhancement using GANs
- Developed a photo enhancement pipeline using **U-Net**, **Wasserstein GANs**, improving image quality by 30% on NUS dataset

Probing GPT-2 Layers in Relationship Analysis   [Github]
- Probed **GPT-2** with **Baukit**, analyzing MLP and attention layers with **SNLI** corpus, trained classifiers on hidden states for identifying entailment, contradiction, and neutral relationships, revealing **incremental** learning across layers

Postagging and Autocorrection   [Github]
- Explored multilingual POS tagging systems using **HMM**, **RNN**, **LSTM**, **BiLSTM** models for English, Bulgarian, Japanese and evaluated an autocorrection system leveraging **n-gram** language models and **Viterbi** algorithm with edit distance

Research Experience

Research Assistant | Computer Graphics and User Interfaces Lab   Sept 2024 - Dec 2024
- Developed **PolXR** application on **Oculus Quest 2** using **Unity**, **C#**, enabling intuitive geospatial data exploration for glaciology
- Implemented shared mode networking with **Photon Fusion** and dynamic radargram rendering, reducing memory usage by **45%** and scene load times by **40%** while preserving high-res visuals

Research Assistant | Computer Enabled Abilities Lab   May 2024 - Dec 2024
- Developed an **AR app** in **Unity (C#)** for **Android** to showcase Harlem's history and community stories, using stakeholder feedback and **Figma** workflows to streamline UI/UX and speed up development