Chandana Tulluru

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EDUCATION

Texas Tech University	**Lubbock, Texas**
Master of Science, Computer Science	Jan 2022 – Dec 2023
Indian Institute of Information Technology, Sri City	**Sri City, India**
Bachelor of Technology, Electronics and Communication Engineering	Aug 2017 – May 2021

TECHNICAL SKILLS

Programming: Python, C++, JavaScript (React, Node.js, Next.js, Angular), Django, Java, Bash, MATLAB, SQL
AI/ML Tools: PyTorch, TensorFlow, LangChain, Hugging Face, OpenAI APIs, RAG, Reinforcement Learning, BART
NLP Expertise: Entity Extraction, Text Summarization, LLM Fine-Tuning
Cloud & DevOps: Azure, AWS (Sage Maker, EC2, Lambda), Terraform, Docker, Kubernetes, CI/CD
Databases: PostgreSQL, MongoDB, Redis, SQL Server, Vector Databases
Security & APIs: JWT, RESTful APIs, Penetration Testing, RESTful APIs, GraphQL, Postman, O-Auth
Other: CUDA, OpenMP, MPI, TPU Optimization, Digital Forensics, Software Security, System Design

WORK EXPERIENCE

Software Engineer (AI) | **Shellback Survival Systems**   Remote, TX-US | July 2023 – Till Date
- **Generative AI:** Fine-tuned and deployed state-of-the-art LLMs for predictive maintenance, with a 25% improvement in model accuracy using synthetic data generation techniques.
- **Backend Systems:** Designed RESTful APIs using Node.js, Python reducing API latency by 15% while ensuring secure authentication with JWT and data handling with MS SQL Server.
- **Real-Time Communication:** Implemented WebSocket-based systems to enable data synchronization, cutting refresh lag by 30%.
- **Front-End:** Developed responsive UIs using Next.js, React, Material UI, and Tailwind CSS, enhancing UX and engagement by 15%
- **Cloud:** Deployed applications on Azure, automating CI/CD pipelines to reduce downtime by 30% and streamline feature releases.
- **Problem-Solving:** Worked with cross-functional teams, translating business needs into technical solutions that deliver measurable results.

Graduate Assistant | **Texas Tech University**   Lubbock, TX | Jan 2022 – Dec 2023
- **Academic Solutions:** Developed a React-based research paper management system using Python for backend and integrating OpenAI APIs, experimenting with DALL-E for paper summarization and multimodal content generation.
- **Course Assistance**: Collaborated with Professors with the courses Object-Oriented Programming, Operating Systems, and Software Security. Assisted students with their projects, exams and assignments. Automated grading process saving 40% of time.
- **Parallel Computing Expertise:** Enhanced CUDA-based models for image processing, achieving a 40% increase in performance by optimizing convolutional kernels. Managed batch jobs in university's HPC systems(Nocona cluster, Quanah nodes).
- **Security Research & Quantum Computing:** Conducted red teaming exercises to identify vulnerabilities in Windows Defender, LLMs and explored secure quantum communication protocols using simulators like Sequence and python libraries.

Python Developer | **Jivass Technologies**   Chennai, India | May 2020 – Dec 2021
- **Backend:** Transitioned a monolithic system to a microservices architecture using Python, Django, improving scalability and reliability.
- **ETL Pipelines:** Designed and implemented scalable ETL workflows for large data ingestion and transformation processes.
- **Real-Time Anomaly Detection:** Deployed LSTM-based models on AWS EC2 to monitor system health, reducing downtime by 23%.
- **Data Management:** Utilized PostgreSQL and Vector Databases for large-scale data storage and analytics, enhancing query performance.
- **Visualization:** Built Power BI dashboards for real-time data monitoring and analytics enhancing data-driven decision making by 35%.
- **IoT Enablement:** Engineered an OTA update system for IoT devices, ensuring seamless firmware updates across distributed systems.

PROJECTS

CrewAI: Agentic Workflow Automation
- Developed an AI-Agentic workflow leveraging reinforcement learning and LLMs to automate decision-making for collaborative tasks.
- Improved task efficiency by 35% by reducing manual intervention in real-time collaborative environments.

Abstract Summarization with contextual Information
- Built a RAG model with BART to summarize research papers, integrating Dense Passage Retrieval (DPR) for improved contextual relevance.
- Increased ROUGE-L scores by 10% compared to baseline models, delivering high-quality, concise summaries.

Real time collaborating Platform
- Designed a real-time collaboration tool using MongoDB, Express.js, and WebSockets for seamless multi-user interaction.
- Integrated syntax highlighting and error detection for Python, C++, and JavaScript to enhance the debugging experience.

Water Pollution Detection System
- Built and designed an end-to-end pipeline with Flask (Python) and Flutter (Dart) for mobile and web-based monitoring of pollution levels using IoT devices, integrating hardware (Raspberry Pi, Arduino) with sensors for real-time data collection.
- Developed computer vision models (YOLO V4, Mask R-CNN) for pollution detection from water body images, achieving 90% accuracy.

Eligibility: F1-OPT VISA, Eligible to work in the US | Open to relocation