Venkata Harshitha Bathala

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PROFESSIONAL SUMMARY

I am a dedicated graduate student pursuing a master's in computer science at the University of Texas at Arlington, with a strong academic foundation in data structures, the software development lifecycle, and Agile methodologies. My role as a Graduate Research Assistant provided practical experience in web development and UNIX environments, while my position at DXC Technology sharpened my skills in data analysis and process automation. With proficiency in Python, Java, and C/C++, I am committed to delivering efficient and robust technology solutions. Additionally, I have knowledge of DevOps tools like Docker, Kubernetes, and CI/CD pipelines, which I am eager to apply in real-world environments. My certifications as an AWS Certified Cloud Practitioner, Microsoft Azure (AZ-900), and Lean Six Sigma Yellow Belt underscore my dedication to continuous learning and technical excellence.

EDUCATION

UNIVERSITY OF TEXAS AT ARLINGTON *Jan 2024 – May 2025*
Master's in Computer Science

- GPA: 3.9/4.0
- **Coursework:** Data Mining, Web Development, Artificial Intelligence, Machine Learning, Computer Vision, Advance Software Engineering, Distributed Systems

EXPERIENCE

GRADUATE RESEARCH ASSISTANT *Arlington, TX*
University of Texas at Arlington *July 2024 – May 2025*

- I am responsible for both development and Administration Tasks, prioritizing and executing them based on the specific requirements and needs of the department.
- Developing a Simplified Portal for UTA's CSE Faculty to streamline access to essential resources, previously buried under multiple layers of the university's website. This website will be accessible only by the CSE department.
- Extracted and organized crucial information, such as inventory details, networking and security policies, supported operating systems and tools, completed projects, important forms, and request submissions for faculty queries.
- The technologies utilized include HTML, CSS, JavaScript, and PHP for the programming languages, Apache for the web server, and MySQL for the database.
- For Administration Tasks, I manage the setup and configuration of lab systems for the CSE department.
- LUKS encryption was chosen after researching various methodologies, primarily for its wide compatibility across Linux distributions. Its robust encryption features, including multiple keys and secure disk wiping, ensure comprehensive data protection.
- Implemented automated Bash scripts for antivirus deployment to maintain system integrity and a user management script to automate student account creation, enforce access restrictions, and manage permissions within lab environments.
- Optimized virtualization resources, such as VirtualBox, to ensure students receive enhanced computing capabilities for coursework.
- Monitored and maintained UTA's two servers, specifically tracking the percentage increase in resource usage to ensure system health and maintain uptime.
- Operating systems worked on include Debian-based (Ubuntu) and RPM-based (CentOS, Red Hat, Fedora) systems.

ASSOCIATE PROFESSIONAL SOFTWARE ENGINEER *Chennai, India*
DXC Technology *Mar 2023 – Dec 2023*

- Served as an integral contributor to both Lean and Data Analysis teams, merging process improvements with advanced analytics.
- Led automation initiatives in Lean processes, achieved 5% FTE savings and enhanced operational efficiency.
- Designed and optimized Value Stream Mapping (VSM) strategies to eliminate bottlenecks and improve workflow.
- Spearheaded automation management using JIRA, UCML, and STA tools, driving improvements in process reliability and operational efficiency.
- Collaborated directly with clients representing global brands in the automotive and luxury sectors; developed dynamic dashboards in Power BI and Tableau to empower data-driven strategic decisions.
- Integrated machine learning models for predictive analytics, enhancing forecasting accuracy and operational insights.

Skills

- **Operating Systems:** Linux, Unix, Windows
- **Web Development:** HTML, CSS, JavaScript, PHP
- **Programming Languages:** C, Java, Python
- **Data Analysis & Visualization:** Power BI, Excel, Python, Tableau
- **Cloud Platforms:** Microsoft Azure Administrator, AWS
- **DevOps Tools:** Docker, Kubernetes, CI/CD (Git, Ansible)
- **Databases:** SQL, MongoDB
- **Libraries & Frameworks:** TensorFlow, Keras, PyTorch, Scikit-learn, NLTK, Pandas, NumPy, Matplotlib, Seaborn
- **Shell Scripting:** Bash
- **Tools:** JIRA, UCML, STA, Apache, Tomcat

PROJECTS

Sentiment Analysis on Song Lyrics Git Repository

- Developed a sentiment analysis model for a highly imbalanced spotify song lyric dataset.
- Applied text preprocessing techniques such as tokenization, stop-word removal, and lemmatization using NLTK, while using Word2Vec embeddings with Gensim for feature extraction. Balanced training data using stratified splitting and data augmentation via the nlpaug package to address class imbalance.
- Fine-tuned the bidirectional LSTM with various hyperparameter configurations, achieving 75% accuracy in the validation set. The model's classification performance was further improved by implementing BERT via the Transformers library, achieving 77% accuracy.
- Evaluated the performance of the model by building confusion matrices using Scikit-learn and implemented a real-time emotion prediction function capable of analyzing song lyrics and classifying their emotions effectively.

Smart HealthCare Hub Git Repository

- Developed a full-stack healthcare platform for patients, providers, administrators, and pharmacists with features like secure authentication, appointment booking, health records, symptom checking, and real-time messaging.
- Built the front end using HTML, CSS, and JavaScript; implemented the backend with PHP and MySQL, integrating Axios for seamless API communication to enhance healthcare accessibility and efficiency.
- Ensured data protection through secure authentication and role-based access control, aligning with security and compliance standards.
- Technologies Used: HTML, CSS, JavaScript, PHP, MySQL, APIs.

Assistive Visual Question Answering (VQA) System Git Repository

- Developed two distinct Visual Question Answering (VQA) pipelines to assist visually impaired users by answering natural language questions on real-world images from the VizWiz dataset (31k pairs).
- Implemented a classification-based model using PaliGemma-2 for feature extraction and a lightweight Multilayer Perceptron (MLP) classifier ($512 \rightarrow 256 \rightarrow 6503$), achieving 71
- Built and fine-tuned CLIP-ViT-GPT2, SigLIP-GPT2, and ViT-GPT2 models, combining Vision Transformers with GPT-2 for open-ended answer generation, reaching 56
- Integrated Large Language Models (LLMs) and NLP techniques for multimodal embedding alignment, image-question understanding, and autoregressive decoding.

REFERENCE

- **Bito Irie**, Manager of Operations and Services
  Department of Computer Science, University of Texas at Arlington
  Email: irie@uta.edu

CERTIFICATIONS

- AWS Certified Cloud Practitioner
- Microsoft Azure Certification (AZ900)
- AIGPE Lean Six Sigma Yellow Belt Certification