Pavan Subhash Chandrabose Nara

Proficient in **Data Analytics | Cybersecurity Frameworks | Research Methodologies**

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PROFESSIONAL SUMMARY

Accomplished Master of Science in Computer Science (4.0 GPA) with published research and robust experience in data analytics, machine learning, and cybersecurity. Expert in building end-to-end data pipelines and creating interactive dashboards to solve complex problems. My background is unique in its focus on leveraging data-driven solutions while ensuring robust data security and ethical information handling, as demonstrated in my research on accessible cybersecurity education.

SKILLS

Data & AI: Data Analysis, Machine Learning, Predictive Modeling, ETL, Data Pipelines, Data Visualization, GenAI, LangChain, Prompt Engineering, RAG, LLMs (GPT)

Programming: Python, Java, C/C++, HTML, CSS, JavaScript, SQL, PostgreSQL, REST APIs

Tools & Libraries: Pandas, NumPy, Scikit-learn, TensorFlow, PyTorch, Matplotlib, Seaborn, Jupyter Notebooks

Cloud & DevOps: AWS (S3, Lambda, RDS, EC2), Snowflake, Ansible, Git, GitHub, Bitbucket, Linux

Cybersecurity: Threat Modeling, Vulnerability Assessment, Security Governance, Forensics, Compliance Research

Professional: Technical Writing, Agile, Critical Thinking, Collaboration, Research & Development, Stakeholder communication

EXPERIENCE

Southeast Missouri State University **Missouri, USA**

Graduate Teaching & Research Assistant *Jan 2024 – May 2025*

- Automated the extraction and consolidation of data from 16 gradebook files using Python, decreasing manual processing time by 80%.
- Developed a Python-based data processing workflow (Pandas, NumPy) to clean and standardize 16 course gradebook files, reducing data inconsistencies by 25% and improving dataset reliability.
- Applied statistical analysis and data mining techniques to identify trends and patterns in student performance data, providing actionable insights that led to targeted interventions and improved student outcomes.
- Analyzed and evaluated 50+ student assignments, midterms, and projects, ensuring data accuracy and consistency, resulting in a 15% improvement in grading accuracy and reduced grading discrepancies.
- Mentored over 120 undergraduate students in Cybersecurity, Python, Java, Cloud computing, developing interactive coding exercises that improved course completion rates by 50%.
- Provided data-driven recommendations for course improvement based on data analysis, translating insights into actionable steps that enhanced the overall learning experience and student satisfaction.

PROJECTS & RESEARCH

Local Healthcare Access and Wait Time Analyzer **Missouri, USA**

Analyst *Jul 2024 – Jan 2025*

- Analyzed over 3,000 healthcare facilities and 1,000+ U.S. counties by integrating public datasets (HRSA, Census API, HealthData.gov) into a unified SQLite database, highlighting underserved regions and care disparities.
- Identified 150+ high-risk healthcare “desert” counties by calculating population-to-provider ratios and geospatial distances, enabling targeted recommendations for infrastructure investment.
- Reduced manual data prep time by 70% via automated ETL pipelines in Python (Pandas, requests, Geopandas), standardizing heterogeneous healthcare and census datasets.
- Created interactive dashboards with Streamlit and Folium, including choropleth maps and facility load visualizations, surfacing geographic inequities in care across urban vs. rural communities.
- Detected 35 counties with clinic load exceeding 3× national average, influencing a policy proposal for new clinic placements and mobile health units.

Prompt Tree: Enhancing guided interactions for Accessible Cybersecurity Training **Missouri, USA**

Master’s Thesis, ACMSE 2025, CAINE 2024 *Jan 2024 – Dec 2024*

- Developed the Prompt Tree framework, a novel prompt engineering approach inspired by the fishbone diagram, to enhance cybersecurity education and LLM interactions.

- Designed a structured and intuitive methodology for prompt creation, incorporating threat dimensions (Threat, Vulnerability, Skill, Work Role, Certification) and credible cybersecurity sources (OWASP, NVD, CVE, Exploit-DB, NICCS, NICE).
- Validated the framework's effectiveness through a 51-participant usability study, proving a significant increase in prompt clarity, relevance, and user satisfaction for security tasks.
- Shipped a complete Q&A system from concept to deployment, utilizing Python, Google Gemini API, and a RAG architecture to educate users on cybersecurity threats.

EDUCATION

Southeast Missouri State University **Missouri, USA**
Master of Science in Computer Science *Graduated, May 2025*

- **GPA**: 4.0/4.0
- **Relevant Coursework**: Advanced Software Engineering, Data Analytics, Data Mining, Advanced Artificial Intelligence, Research Methods, Advanced Database Management Systems, Thesis I and II, Blockchain Programming, Cybersecurity, Advanced Programming Languages.

Kakatiya University **Telangana, India**
Bachelor of Technology in Computer Science *Graduated, Jun 2022*

- **GPA:** 8.39/10.00
- **Related Coursework:** Data Analytics, Data Science, Mathematics, Statistics & Applications, Database Management, Machine Learning, Design and Analysis of Algorithms

CERTIFICATIONS

- Social and Behavioral Responsible Conduct of Research, CITI Program
- IRB for Social and Behavioral Researchers, CITI Program
- Cloud Security and Audit Fundamentals: AWS, Microsoft Azure, and Google Cloud | Issued: Jun 2025 | Cloud Security, Network Security Auditing
- Automation with Python and PowerShell for IT and Cybersecurity | Issued: Jun 2025 | Automation, PowerShell
- AWS Essential Training for Developers | Issued: Jun 2025 | Amazon Web Services (AWS)
- Advanced Excel: Data Analysis | Issued: Jun 2025 | Data Analysis

AWARDS AND PUBLICATIONS

[1] *Outstanding Computer Science Graduate Student*, 2025.

[2] Subhash Chandrabose Nara et.al (2025). Accessible Cybersecurity Education Using Prompt Tree. In: CAINE 2024., vol 2242. Springer, Cham. https://doi.org/10.1007/978-3-031-76273-4_9

[3] Kavya Nikhita Meda, Pavan Subhash Chandrabose Nara et al.2025. Integrating Prompt Structures Using LLM Embeddings for Cybersecurity Threats. ACMSE 2025. https://doi.org/10.1145/3696673.3723069