

Vignesh Ponnam

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PROFESSIONAL SUMMARY

Computer Science graduate student with experience supporting requirements elicitation, process analysis, system documentation, Agile SDLC execution, and user acceptance testing. Proven ability to collaborate with cross-functional stakeholders, analyze cost-effectiveness and technical feasibility, and translate business needs into structured technical and process solutions. Experienced in workflow modeling, test scenario development, and validation of system requirements across modernization and data-driven initiatives.

EDUCATION

University at Albany, SUNY <i>M.S., Computer Science</i> (GPA: 3.6)	2024 - 2026
Sreenidhi Institute of Science & Technology <i>B.Tech</i> (GPA: 8.7)	2020 - 2024

WORK EXPERIENCE

AsterTech LLC (formerly in collaboration with NordTech & Griffiss Institute) :- Jun – Dec 2025

AI/ML Developer – Technical Analyst

- Designed and implemented end-to-end data pipelines for large-scale scientific text, integrating multi-source abstract collection, preprocessing, and sentence-level data extraction.
- Built a provenance-aware, evidence-driven knowledge graph, structuring extracted facts with explicit source–sentence traceability to support reliable analysis and explainable decision-making.
- Evaluated and selected efficient data models and graph-based architectures, balancing scalability, performance, and cost while meeting project objectives.
- Performed requirements validation and iterative verification throughout development, ensuring alignment with original research goals and evolving project needs.
- Developed structured data representations and visualizations to explore extracted knowledge, enabling clear interpretation for both technical and non-technical audiences.
- Translated complex extraction pipelines, graph structures, and analytical outcomes into clear documentation, implementation reports, and summaries for effective communication.
- Collaborated closely with mentors and stakeholders to define data requirements, extraction scope, and semantic definitions, supporting consistency, governance, and future extensibility.

University at Albany :- Sep 2025 – Dec 2025

Student Assistant

- Supported academic operations through data tracking, reporting, and documentation.
- Ensured accuracy, confidentiality, and consistency of records and evaluations.
- Communicated clearly with students, instructors, and staff, reinforcing strong written and verbal skills.

PROJECTS

AI / ML & Data-Analysis:

- **GraphRAG (Explainable AI):**
Developed a Knowledge Graph–enhanced Retrieval-Augmented Generation (RAG) system supporting a Digital Twin platform. A data-driven analytics system integrating structured databases for traceable insights and reporting. Applied data governance concepts such as role-based access, sensitivity tagging, and documentation standards. (*Python, Neo4j, Kuzu, LLM, HuggingFace*)
- **Agro-Assist:**
Built an AI-powered farmer support platform for crop prediction, disease detection, fertilizer recommendations, and weather alerts. Integrated e-commerce and equipment rental modules for user engagement. (*Python, Flask, AWS Cloud, ReactJS, ML, Full Stack*)
- **Phishing Detector:**
Developed an Android application integrated with a Flask API to detect malicious URLs using a trained machine learning model for real-time classification. Enabled secure client-server communication for instant predictions and enhanced user awareness against phishing threats.
- **AWS Data Visualization:**
Designed a cloud analytics pipeline using AWS S3 and Redshift for large-scale data processing. Enabled interactive dashboards for real-time business insights. (*AWS, SQL, Python*)

Full-Stack & Cloud Applications:

- **MediCare:**
Built a cloud-backed database application for healthcare workflow tracking and reporting. Focused on data integrity, structured storage, and operational dashboards.
- **Meeting Scheduler:**
Implemented a secure video meeting scheduler integrating ReactJS and WebRTC, applying visual cryptography for confidential communication. (*ReactJS, WebRTC, Flask, Cryptography*)
- **Recipe Search:**
Built a ReactJS-based recipe finder app with live API integration for real-time search and nutritional insights. (*ReactJS, REST APIs*)

Cybersecurity & Networking:

- **Cybersecurity – Threat Management (SOC):**
Researched and simulated security operations workflows for threat detection and incident response using SOC tools. (*Palo Alto, SIEM Tools, Networking*)

CERTIFICATIONS AND TRAINING

- **Salesforce Developer:**
Apex, Triggers, SOQL, S-Objects, Workflow Automation, Lightning Web Components.
Developed and customized apps using Apex and Lightning Web Components; completed SuperBadges demonstrating data modeling, security, and automation skills.
- **AWS Cloud Architecture & Data Analytics:**
Designed and deployed cloud-based data pipelines using S3, Redshift, RDS, and EC2, integrating automation for data ingestion, transformation, and monitoring. Optimized workflows for real-time analytics, scalability, and cost efficiency while ensuring secure cloud resource management and role-based access control.
- **Cisco Networking Associate:**
Gained practical knowledge in IP networking, routing, and enterprise-level troubleshooting using routers, switches, and firewalls.
- **Palo Alto Cybersecurity:**
Trained in SOC operations, firewall configuration, and incident response to secure hybrid infrastructure.

UNIVERSITY INVOLVEMENT

2025 - 2026

Indian Student Organization | *Web Development Chair*

RESEARCH

- Phishing Website Detection.
 - https://www.researchgate.net/publication/378400607_URL-BASED_ANDROID_APPLICATION_FOR_IDENTIFICATION_OF_WEBSITE_PHISHING
- Secure Meeting Scheduler. Visual cryptography in digital meetings for secure communication.

SKILLS

- **Languages:** Python, Java, C, R
- **AI/ML:** Explainable-AI, Cloud-AI, Scikit-learn, TensorFlow, PyTorch, LangChain, Hugging Face, Llama Models
- **Technologies:** Android, Graph Database, Neo4j, Kuzu, ReactJS, Flask, WebRTC, Visual Cryptography
- **Cloud & DB:** AWS (S3, RedShift), MongoDB, Google Cloud (CloudSQL, Database), Salesforce Development
- **Concepts:** RAG Pipelining, LLMs, Machine Learning, Cybersecurity, Full-stack Development
- Agile Processing, SDLC, Scalable and Intelligent Software systems Development.
Access Control (RBAC), Secure SDLC, Risk Identification, Data Governance, Incident Response Awareness.