

AADITYA THAPLOO

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PROFESSIONAL SUMMARY

Computer Science Master's graduate with hands-on experience in software engineering, cybersecurity, and analytics. Designed and optimized scalable systems that improved performance, boosted reliability, and reduced security risks, while streamlining processes through automation and data-driven decision-making. Passionate about machine learning, distributed computing, and automation, and eager to deliver measurable impact in software development, information security, QA, and data engineering.

PROFESSIONAL EXPERIENCE & PROJECTS

IT & Automation | Logenix International

Fairfax, Virginia

- Automated supply chain workflows using scripting and workflow automation tools; provided Tier 2 technical support including system setup, hardware configuration, troubleshooting, and staff training; collaborated with cross-functional teams to identify bottlenecks and design scalable IT solutions. Reduced manual tasks, improved operational efficiency by **30%**, and ensured seamless IT operations and user satisfaction.

Software Engineer | Virtusa Consulting Services Pvt. Ltd.

Mumbai, India

- Conducted penetration tests using the MITRE ATT&CK framework; implemented threat mitigation strategies; monitored enterprise security metrics using Security Scorecard and Black Kite; analyzed logs and network traffic via SIEM tools for incident detection and response. Enhanced detection capabilities, improved compliance posture, and reduced potential attack exposure.

Chef Assistant - AI-Powered Recipe Recommender (Python, LangChain, OpenAI, APIs)

- Built a Retrieval-Augmented Generation (RAG) model with short- and long-term memory using LangChain and Gemini embeddings; integrated Spoonacular & API Ninjas Nutrition APIs; implemented fallback handling, recipe adaptation, and nutritional lookup. Delivered a dynamic AI cooking assistant improving recipe relevance, accuracy, and nutritional insights.

Branch Prediction Algorithms – Performance Optimization Project

- Designed and implemented 1-bit, 2-bit PAp, and hybrid predictors; analyzed traces and hardware trade-offs. Achieved up to **87.5% accuracy** while optimizing performance vs. resource use.

Algorithms and Systems Performance (C++, MPI, Linux)

- Developed parallel data generators and optimized merging algorithms for distributed Linux systems; benchmarked and analyzed graph algorithms (DFS, BFS, Prim's, Dijkstra) using MPI. Achieved high-efficiency I/O operations, reduced runtime, and improved scalability.

AI Virtual Assistant for Customer Support (Python, NLP)

- Designed an AI/NLP assistant capable of handling complex queries; integrated APIs for real-time data; implemented intent recognition and response generation. Improved resolution times, enhanced customer experience, and reduced support workload.

Lung Cancer Image Classification (Python, CNN, TensorFlow)

- Built a CNN model with preprocessing (normalization, augmentation) and hyperparameter tuning; evaluated precision, recall, and F1-score. Improved detection accuracy and model generalization for medical imaging tasks.

SKILLS & INTERESTS

- **Programming & Tools:** Python, Java, C, C++, PHP, TensorFlow, PyTorch, Selenium, JIRA, ONNX, MPI
- **Data & Cloud:** SQL, NOSQL, Hadoop, Spark, Hive, Impala
- **Cybersecurity:** Penetration Testing, Vulnerability Assessment, MITRE ATT&CK, Security Scorecard, Black Kite
- **Systems & Soft Skills:** Linux/Unix, Windows, Problem-Solving, Collaboration, Communication, Leadership

EDUCATION

Master of Science in Computer Science

Purdue University Northwest - Hammond

Bachelor of Science in Computer Science

MIT World Peace University - Pune, India

CERTIFICATIONS

- Google: Foundations of Cybersecurity | Generative AI | Data Science | Automate Cybersecurity Tasks with Python
- Connect and Protect: Networks and Network Security | Tools of the Trade: Linux and SQL