SAI TARRUN PITTA

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GitHub: https://github.com/saitarrun | Portfolio: https://saitarrun.github.io/portfolio-website

EDUCATION

California State University, Fullerton **Aug 2024 - May 2026**
Master of Science in Computer Science **GPA:** 3.67/4.00
Coursework: Analysis of Algorithms, Database Management, Machine Learning, Software Management, Software Verification
Gandhi Institute of Technology and Management **July 2019 - Apr 2023**
Bachelors of Technology in Computer Science

SKILLS

Programming Languages: Python, JavaScript (ES5/ES6), SQL, HTML5, CSS, Linux, C++
Frameworks and Libraries : ReactJS, Node.js, ExpressJS, Spring Boot, Django, Flask, PyTorch, scikit-learn, OpenCV, Tesseract
Software Development: Data Structures & Algorithms, Object-Oriented Programming (OOP), Functional Programming, Multithreading, System Design, RESTful API Design, Microservices Architecture, API Gateway, Authentication & Authorization, WebSockets, Agile Methodologies (Scrum/Kanban), Performance Tuning, Scalability, Design Patterns, Software Development Life Cycle (SDLC), CI/CD Pipelines, Software Verification & Validation, Test-Driven Development (TDD), Operating Systems.
Devops and Cloud Tools: AWS (EC2, S3, EKS), GCP (GKE), Docker, Kubernetes, Jenkins, Terraform, Helm, Ansible, CI/CD Automation, Infrastructure as Code (IaC), Load Balancing, Auto-scaling.
Developer Tools: Version Control, Git, GitLab, JIRA, Linux, Selenium, Kafka, JUnit, PyTest, SonarQube, Prometheus, Postman,
Databases: PostgreSQL, MySQL, MongoDB, Firebase, Redis, Snowflake, Cassandra
Machine Learning & AI : Supervised & Unsupervised Learning, Deep Learning, CNN, NLP, RL, Feature Engineering,

EXPERIENCE

Research Assistant, California State University, Fullerton **Dec 2024 - Present**
- Designed and implemented a multi-model hardware Trojan detection pipeline using PyTorch, PyTorch Geometric, and scikit-learn, achieving 90%+ accuracy by modeling FPGA power traces as 1D temporal graphs with 2,500 nodes via a custom GNN (GATConv).
- Deployed deep learning models including LSTM for temporal anomaly detection and integrated One-Class SVM with PCA, improving accuracy by 25% and reducing false positives by 30%.
- Developed a real-time anomaly visualization pipeline and integrated it into the ETL workflow, reducing data analysis time by 40% and improving pipeline efficiency by 20%.

Software Engineer, Accenture **Jan 2023 - Aug 2024**
- Spearheaded the strategic redesign of backend services using Java, Python, and multithreading, collaborating with cross-functional teams and stakeholders to align with business continuity goals and boost system throughput by 18%.
- Partnered with QA and DevOps teams to drive test automation initiatives using JUnit, PyTest, and Selenium, reducing release cycles by 35% and ensuring robust test coverage across staging and production environments.
- Engaged product managers and internal clients to define deployment requirements, leading the design of a centralized, SOC 2-aligned CI/CD pipeline using AWS S3, cutting manual configuration efforts by 75%.
- Mentored junior developers and coordinated Kubernetes rollout strategies across AWS EKS and GCP GKE, achieving 99.9% uptime while reinforcing change management best practices and enabling seamless knowledge transfer through detailed technical documentation.

PROJECTS

Automatic Number Plate Detection and Recognition System (Group)
- Built a real-time ANPR system using OpenCV, Tesseract OCR, and CNNs, reducing manual verification time by 70% and costs by 35%. Optimized image preprocessing to enhance low-light detection accuracy by 25%
- Integrated PostgreSQL and Flask with multi-threading, achieving a 40% increase in query efficiency

Network Optimization for Leo Satellites (Group)
- Developed a scalable microservices architecture using Flask, Kubernetes, and Terraform, ensuring **high availability (99.99% uptime)** and seamless real-time data streaming for satellite communication.
- Built a routing system with Reinforcement Learning and Predictive Analytics,reducing latency and cost by 45%, 35%

Food Delivery Cost Comparison Application (Individual)
- Designed a full-stack food delivery price comparison platform using Django, ReactJS, and PostgreSQL, integrating APIs from UberEats, DoorDash, and GrubHub, **helping users save 18-25% per order** by identifying the lowest cost options.
- Optimized **API response times by 30%** through caching, database indexing, and efficient data processing, **ensuring 99.9% uptime with** scalable deployment using **Docker, Kubernetes, and AWS.**

AWARDS AND PATENTS

- **Patent Recognized by UK Government:** ***Automatic Car Driving Mechanism using AI*** — officially registered and recognized by the UK Intellectual Property Office.
- **Conference Presenter at HOST 2025:** Presenting a research paper on ***Hardware Trojan Detection using Machine Learning*** at the IEEE International Symposium on Hardware-Oriented Security and Trust.