Vinit Mepani

New Brunswick, NJ | 732-964-5662 | vinitmepani2712@gmail.com
linkedin.com/in/vinit-mepani-883576206 | github.com/VinitMepani2712 | vinitmepani-portfolio.vercel.app

Summary

Security-focused software engineer with 3+ years shipping production web, mobile, and cloud systems for 50,000+ users. Published 3 plugins on the Moodle Marketplace and built AWS IAM attack-path analysis mapped to MITRE ATT&CK.

Education

Rutgers University | Master of Science in Computer Science, GPA: 3.83/4.0 Jan 2025 – May 2027
Bhagwan Mahavir University | Bachelor of Science in Information Technology, GPA: 3.59/4.0 Aug 2020 – May 2023

Experience

Web Application Developer | Rutgers University – School of Social Work, New Brunswick, NJ Jun 2025 – Present
- Engineered custom Moodle 4.5 plugins (PHP, MySQL, JavaScript) for an LMS with 20,000+ users and 12,000+ monthly grade records; cut report generation from 45s to 9s via query optimization and caching
- Architected a 4-plugin prerequisite management system (access rules, enrollment notifications, learning-path map, compliance dashboard) and a mentorship plugin; 3 published on the Moodle Marketplace
- Built a certificate module (state machine, TCPDF PDF generation, drag-and-drop designer) and Chart.js survey analytics
- Automated multi-day attendance tracking with email alerts and auto-unenrollment, removing 85% of manual tracking; tuned 15+ queries to cut page load 20% and server CPU 40%

Teaching Assistant, Data Structures & Algorithms | Rutgers University, New Brunswick, NJ Sep 2025 – Dec 2025
- Graded 120+ graduate students across 12 problem sets and 3 exams with 48-hour turnaround; led weekly office hours on graph algorithms and dynamic programming

Software Engineering Intern | Rutgers University – Computer Science, New Brunswick, NJ May 2025 – Aug 2025
- Designed a RESTful API with Flask, PostgreSQL, and AWS EC2 serving 200+ students; built a pandas/PyArrow pipeline generating 150+ Jupyter notebooks, saving 40 hours per semester
- Refactored C++ and Express.js backend modules with unit tests and error handling, cutting API errors 18%

Mobile Application Developer | OceanmTech, Surat, India Jan 2024 – Aug 2024
- Architected 15+ reusable Flutter (Dart, MVVM) components for iOS/Android apps with 30,000+ monthly users, speeding feature delivery 40%; implemented JWT auth with secure token refresh
- Built GitHub Actions CI/CD (unit, widget, integration tests), cutting QA from 3 days to 8 hours and crashes 22%

Mobile Application Developer | Fibtion, Surat, India Mar 2023 – Dec 2023
- Migrated a 10,000+ line Flutter app from Provider to BLoC, cutting bugs 25%; integrated REST APIs on 10+ screens

Projects

IAM Attack Graph Analyzer | Python, Flask, NetworkX, AWS IAM, MITRE ATT&CK Live Demo | Apr 2026
- Modeled AWS IAM policies as a state-transition graph; dominance-pruned BFS detects 15+ multi-hop privilege-escalation paths (role chains, permission pivots, cross-account trust abuse) mapped to MITRE ATT&CK TA0004
- Scans 500+ policies in under 2s; flagged 89 critical findings with CVSS-style scores and PDF remediation reports

Distributed Network Attack Detection | PySpark, Hadoop MapReduce, HDFS, YARN, AWS In Progress
- Comparing Hadoop MapReduce and Spark for large-scale network traffic analysis and cyberattack detection

UniNest – Student Housing Platform | React, Firebase, Firestore, Firebase Auth Live Demo | Sep 2025
- Built a roommate-matching platform for 500+ Rutgers students with real-time listings and chat; 92/100 Lighthouse score

Open Source (Moodle Marketplace)

availability_prerequisite | Gates activities on prerequisite course completion; PHPUnit and Behat tested Marketplace
block_prerequisitemap | Visualizes learning pathways and course completion status; GDPR-compliant Marketplace
local_mentorship | Mentor-mentee pairing with progress tracking, grade reports, and CSV export Marketplace

Technical Skills and Certifications

Languages: Python, JavaScript, TypeScript, PHP, SQL, Java, C/C++, Dart
Security: AWS IAM Policy Analysis, Privilege-Escalation Detection, MITRE ATT&CK, Threat Modeling, Network Security
Web & Mobile: React, Next.js, Node.js, Express.js, Flask, PHP/Moodle, REST APIs, GraphQL, WebSockets, Flutter
Data & Cloud: PostgreSQL, MySQL, Redis, Spark, Hadoop, pandas, AWS (EC2, S3, RDS, Lambda, IAM), GCP
DevOps & Testing: Docker, Linux, Git, GitHub Actions, CI/CD, PHPUnit, Behat, Postman, Agile/Scrum
Certifications: Google Cybersecurity, Google UX Design, Microsoft Azure AI Fundamentals, Google AI Essentials