

# NIKILESH MADALA

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## EDUCATION:

**Virginia Tech** (Masters in computer science)

**Aug 2023 - May 2025**

*Related Coursework: Web Development, Cloud Computing, Information Security*

**Anna University** (Bachelor of Engineering in Computer Science)

**Aug 2018 - Jun 2022**

*Related Coursework: Data Structures, Object Oriented Programming, Database Management Systems*

## TECHNICAL SKILLS:

**Expertise Areas:** Full-stack Development

**Languages:** Python, Java, JavaScript, TypeScript, SQL, Linux, Ruby, Shell

**Databases:** Oracle, MySQL, SQL Server, MongoDB, PostgreSQL, GraphQL

**Frameworks/Web Technologies:** React, Redux, Node.JS, Express, jQuery, Bootstrap, Vue.js, Rest APIs, Spring, Angular, Apache

**Technologies:** AWS, Power BI, Snowflake, Git, Bitbucket, Postman, Docker, Kubernetes, Jira, Jenkins, Kafka

## EXPERIENCE:

**Software Engineer at Cognizant**

**Nov 2022 - Jul 2023**

- Developed and maintained robust APIs using Python to manage insurance portfolios, client policies, and policy creation processes, enhancing data retrieval efficiency by 30% and reducing error rates by 20%.
- Modeled and implemented user-friendly front-end interfaces with React functional components for seamless policy management and portfolio tracking, which improved user interaction.
- Built and optimized serverless backend solutions using AWS Lambda, integrating with AWS VPCs to ensure secure and scalable handling of policy data, which led to a 25% reduction in operational costs.
- Architected and led AWS infrastructure initiatives including EMR solutions for policy management, achieving 99.9% system uptime while reducing sprint cycle time by 40% through automated deployments and optimized data processing for high-volume client interactions.

**Software Development Intern at Cognizant**

**Feb 2022 - Jun 2022**

- Designed customer profile using React, successfully improving user experience and streamlining the profile management process, maintaining a 99.9% satisfaction rate with only 1 in 10,000 users experiencing issues.
- Created and deployed corresponding APIs for profile updates, ensuring data integrity and reducing update processing time.
- Resolved 20+ client-reported bugs, enhancing application reliability and user satisfaction.
- Documented sprint processes and development workflows in Confluence, facilitating seamless knowledge transfer across agile teams and reducing onboarding time.

## PROJECTS:

**UniNav - Campus Navigation Platform:**

- Engineered a scalable navigation system utilizing React.js with TypeScript, implementing custom hooks for geolocation handling and integrating What3Words API with a self-developed geocoding wrapper, achieving <1m location accuracy.
- Architected a WebSocket-based real-time notification system using Socket.io with Redis pub/sub, implementing automatic reconnection and message queuing, resulting in 99.9% delivery rate and <100ms latency for 10,000+ concurrent users.
- Developed a hybrid recommendation engine combining collaborative filtering and content-based algorithms using Python/NumPy, incorporating user behavior analytics and achieving 85% relevancy in event suggestions through K-nearest neighbors clustering.

**Encrypted Image Transmission System:**

- Implemented an enterprise-grade encryption system utilizing AES-256-GCM mode with PBKDF2 key derivation, incorporating secure key rotation and perfect forward secrecy principles.
- Engineered a comprehensive security layer with mutual TLS authentication, certificate pinning, and HSTS preloading, with 49 out of 50 transmissions verified as uncompromised.
- Developed a blockchain-based verification system using Merkle trees for tamper detection, implementing real-time hash verification and achieving 96% accuracy in unauthorized modification detection across 50 test cases.

**Full-Stack LMS Clone:**

- Designed a high-performance LMS using Django with custom middleware for caching and PostgreSQL optimization, implementing database partitioning and achieving 30ms average response time under 1000 CCU load.
- Architected Python-based quiz modules with randomized questions and multi-format support, enhancing user engagement.
- Built RESTful APIs with Node.js and Express, reducing data retrieval time.
- Utilized React Hooks for state management and produced secure video uploads and PDF generation, improving content accessibility.

## Certifications:

- 3x AWS Certified including AWS Solutions Architect Associate & AWS Developer Associate.