

Mradul Natani

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Education

International Institute of Professional Studies (IIPS), DAVV

- Integrated Master of Computer Applications (MCA) [2022—2027] - CGPA: 8.36 (8th sem)

Internship Experience

IIPS, DAVV

May 2025 - Jul 2025

- Built an automated certificate generation system with CSV-based personalization, signature embedding, and automated email delivery.
- Deployed the application on the institute's Linux server with full environment setup and security configuration.

Projects

SSH Certificate Authority

[GitHub repo]

- Traditional methods like passwords and static public keys are either insecure or difficult to manage at scale. This system replaces them with short-lived, signed SSH certificates that are issued dynamically based on user identity and role.
- By integrating JWT based authentication, and tools like Consul, Confd, and OpenSSH CA, it automates the entire certificate lifecycle ensuring time-bound access, easy revocation, and complete auditability.
- Architected a centralized SSH trust model where servers trust a single Certificate Authority instead of individual public keys, significantly simplifying key management while improving security and operational scalability.

FastTransit - AI-Powered Address Transliteration & Validation

[GitHub repo]

- Engineered an end-to-end address normalization pipeline by preprocessing OpenStreetMap PBF datasets into a searchable database, reducing repeated geographic lookups and enabling efficient validation of multilingual addresses.
- An intelligent pipeline designed for e-commerce to bridge the gap between messy user inputs (voice-to-text, regional dialects) and clean, queryable geographic data.
- Developed a third-party address validation service that maps regional scripts to phonetic Roman script via AI4Bharat and cross-references results against OpenStreetMap binary data using fuzzy matching to ensure geographic ground truth.

Fast-Translit Deployment

[GitHub repo]

- Provisioned a production-grade AWS EKS infrastructure using Terraform, including VPC, subnets, NAT Gateway, EKS cluster, and worker nodes.
- Automated Kubernetes application deployment using Ansible, implementing FastAPI + PostgreSQL with StatefulSets, HPA, Ingress, health probes, persistent storage, and database migrations.

Technical Skills

Programming Languages: C++, C, Python, Shell

Technologies, Tools and Frameworks: Linux, AWS, Terraform, Ansible, Docker, Kubernetes, confd, etcd, consul, Bash, FastAPI, Django, Jenkins, GitHub Actions, Git

Databases: PostgreSQL

Extracurricular

Glitch the Grid Hackathon 2026: Secured 1st Position in a team at the hackathon organized by Google Developer Group (GDG), IIPS.

College-Level Hackathon Organizer: Organized and managed a 7-hour hackathon for Development Center student selection.

IIPS CoMET 2025: Core committee member; managed event logistics and volunteer coordination. Contributed to the conference website development.

Hackndore 2024 - Top 10 Finalist: Built an AI-powered search interface at a national-level hackathon.

Synergy Annual Sports Meet – Relay Race Champion (2023 & 2025): Secured first place in the Relay Race.

Taekwondo – National Level Player: Represented at the national level.