

# Daljeet Singh

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## FORMAL EDUCATION

### Amity University, Mumbai

Panvel, MH

Bachelor of Science (B.Sc.) Information Technology, Secondary Field in French and Political Science. June. 2025

- **Relevant Coursework:** Software Engineering, Public Speaking, Data Structures with C++, Operating Systems, Introduction to Machine Learning, Business Intelligence, Cloud Computing (Azure & AWS), Java, DBMS

## SKILLS

**Languages:** C/C++, Python, SQL, Bash, Java, Golang, HTML, CSS

**Databases:** PostgreSQL, MongoDB

**Frameworks/Libraries:** Fast API, REST API, Node.js

**DevOps Tools:** Docker, GitHub Actions, Git, Linux/Unix, CI/CD Pipelines

## PROJECTS

[daljeetsingh.me/#/projects](https://daljeetsingh.me/#/projects)

### Janus | Golang, IP Blocking, Docker, AI Scraper Mitigation, TLS Fingerprinting, HTML —

Aug. 2024 - Sept. 2025

Bot Mitigation & Traffic Analysis Engine

- **Engineered Go-based middleware** for automated bot detection using **multi-signal scoring** (TLS fingerprinting, geo-IP reputation, browser fingerprinting, rate limiting)
- Implemented hybrid Proof-of-Work challenge system with **JWT authentication**, reducing false positives while **maintaining sub-100ms latency** for verified users
- Built **RESTful API** with three core endpoints handling fingerprint ingestion, challenge generation, and verification with **SHA256 cryptographic proofs**
- Designed stateful challenge management system with configurable difficulty levels (desktop/mobile) and **nonce-based replay attack prevention**

### Hull Tactical Market Prediction | LightGBM, Polars, Scikit-learn, Joblib, ONNX, PyTorch —

Sept - Dec.2025

Developed an ensemble machine learning system to predict S&P 500 excess returns with dynamic risk management, processing 252-day rolling windows of financial time-series data in real-time inference environment.

- **Built high-performance feature engineering pipeline** using Polars for on-the-fly feature generation, processing 200+ financial indicators (market, economic, price, volume, sentiment, momentum, derivatives, intermarket metrics)
- **Engineered 500+ derived features** including lag features (1-3 periods), rolling statistics (5-day, 21-day windows), and group-level aggregations across 8 market categories
- **Implemented stateful rolling buffer system** with deque data structures maintaining 252-day historical context, enabling chronological time-series predictions without data leakage

## RESEARCH WORK

Research Publication:

June. 2024 – August. 2025

*"Enhancing Accessibility through Real-Time Scene Understanding & Navigation for Visually Impaired"*

**First Author, IEEE CVPR Workshop on AI for Accessibility, 2025** Co-authored with Dr. Narayan Kulkarni, Assistant Professor, Amity Institute of Information Technology (AIIT) (Under Peer Review)

- Presented a dual-model framework **combining SSD-VGG16 and CRNN** for real-time object and text recognition, optimized for mobile deployment.
- Demonstrated practical efficacy across 1,000 real-world images, with **detailed ablation** studies on model limitations and deployment constraints.

## CERTIFICATIONS

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### Digital Marketing Mastery Course by Quibus Trainings Jaipur

*Skills : Marketing Strategy Development, Copywriting, SEO, Social Media Management, Funnels, Brand Management*

### GitHub Co-Pilot (GH-300) & GitHub Foundations (GH-100) Certified

*Skills : AI Usage and Ethics, Developer use cases for AI, Unit Testing and Application Development*

### Harvard's Computer Science University Course (CS50x) 2025

*Skills : Algorithmic Design and Efficiency, Debugging and Error Handling, Software Engineering Best Practice*