

# ARYAN THEPADE

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## EDUCATION

### New York University, Courant Institute

Master of Science in Computer Engineering & Innovation

GPA: 3.75/4.0

New York, NY

Expected Dec 2026

### Veermata Jijabai Technological Institute

Bachelor of Technology in Information Technology

Mumbai, India

Nov 2017 - Oct 2022

## EXPERIENCE

### FasalTech Private Limited - Founder & Technical Lead

Jalgaon, India | Oct 2020 - May 2025

Scaled agriculture platform from \$5K to \$4M revenue (2022-2025); deployed ML systems serving 10,000+ users and 2000+ farmers across 4 states.

#### Technical & Product:

- Designed and deployed CNN-based crop disease prediction system achieving 72% accuracy for powdery mildew and downy mildew; integrated 15-day hourly weather forecasting with crop phenology data to enable early intervention, reducing crop losses 30% and improving yields 30-40%
- Built full-stack mobile application (Flutter/Django/MySQL) serving 10,000+ users with personalized advisory, real-time weather alerts, SMS notifications, and localized content (Marathi/Hindi); architected SOP generation system incorporating soil genetics, seed type, weather patterns, and budget constraints for farm-specific recommendations

#### Operations & Scale:

- Established multi-state supply chain across Maharashtra, Karnataka, Andhra Pradesh, and Madhya Pradesh in 8 months; secured contracts with Lulu Hypermarket Dubai, Reliance, Zepto, and Swiggy by coordinating 100+ stakeholders with misaligned incentives (farmers, agents, retailers, exporters)
- Selected as youngest participant in Maharashtra Government's VITI Technology Incubation Program from 100+ applicants; secured ₹1M (\$12K) initial funding and office space

## PROJECTS

### H-1B Immigration RAG System | Python, LangChain, FAISS, Claude

- Evaluated 5 RAG retrieval architectures on curated 100-question immigration law benchmark spanning factual, procedural, conditional, and edge-case regulatory scenarios; designed deterministic evaluation methodology using must-include token matching (available on GitHub: lm10aryan/RAG-Visa-LLM-Project)
- Achieved 76% accuracy with hybrid retrieval (Dense + BM25) at 11.4s latency, capturing 90% of enhanced pipeline gains at 60% lower response time; published technical report documenting production tradeoffs

### Transformer Architecture Interpretability | PyTorch, Matplotlib

- Analyzed attention patterns and layer specialization in 12-layer transformer trained on TinyStories dataset; discovered distinct functional roles across network depth (early layers: syntax/position, late layers: semantics/reasoning)
- Implemented causal intervention experiments and embedding space visualizations revealing emergent geometric structure in learned representations; connected findings to Anthropic and DeepSeek interpretability research on layer-wise specialization

## SKILLS

**Languages:** Python, Java, SQL, HTML/CSS

**ML/AI:** PyTorch, TensorFlow, scikit-learn, LangChain, RAG pipelines, Transformers, LLMs, CNNs, Computer Vision

**Tools & Platforms:** Git, Docker, AWS, Firebase, MongoDB, MySQL, Django, Flask, Google Colab