Yohan Vergis Vinu

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EDUCATION

University of Pennsylvania   Philadelphia, PA
Master of Science in Engineering, Computer and Information Science   *Aug. 2025 – May 2027*
- **Relevant Coursework:** Applied Machine Learning, Big Data Analytics, Internet and Web Systems

SRM Institute of Science and Technology   Chennai, India
Bachelor of Technology, Computer Science and Engineering (GPA: 9.8/10)   *Aug. 2021 – May 2025*
- **Leadership:** Class Representative (8 semesters, Best CR award); IoT Lead/Founding Member, NetNex SRM

EXPERIENCE

Software Engineer Intern, Applied AI   Aug. 2024 – June 2025
Moative   *Chennai, India*
- Developed **Vina**, an agentic CHRO platform (featured on Product Hunt) that cuts recruiter screening time by **70%** through interview question generation, performance analysis, and ranking (Django, PostgreSQL, LangGraph, AWS)
- Built an **AI permitting agent** for Rowlett, TX, automating document verification and audit trails; reduced permit issuance from **3–4 weeks to minutes** (Django, LangGraph, Tailwind CSS, AWS)
- Designed a **multi-channel utility agent** for outages/billing, lowering call center workload by **60%** via automated web, voice, and SMS support (Flask, LangGraph, Twilio, OpenAI Whisper, ElevenLabs, PostgreSQL)
- Developed a **Company Lookup API** (FastAPI, ChromaDB, OpenAI SDK) achieving **95%+ NAICS accuracy** using async scraping for real-time firmographics; and **AI for CEQA compliance** (Django, Gemini, ChromaDB, Leaflet.js) producing environmental reports in **seconds** and cutting review effort by **70%**
- Owned full product lifecycles: authored PRDs, shipped AI workflows, built CI/CD pipelines, and led client demos

Machine Learning Engineer Intern   Aug. 2023 – Mar. 2024
Samsung Research   *Chennai, India*
- Fine-tuned and benchmarked **ResNet**, **YOLOv8**, and **MobileNetV2-SSD** for multi-class pet detection, with MobileNetV2-SSD achieving a **7% accuracy gain** over baseline methods
- Compiled and annotated a **10K+ image dataset** through manual image collection, labeling, and augmentation to improve class balance, earning **Samsung's Certificate of Excellence**

PROJECTS

PennSearch: Distributed Cloud Search Engine | *Java, AWS EC2, Distributed Systems*   Dec. 2025
- Built and deployed a fault-tolerant distributed web search engine with a custom web server, distributed key–value store, and parallel analytics engine
- Implemented key-range sharding and replication with coordinator-based health checks to tolerate worker failures during distributed jobs
- Engineered a crawl–index–rank pipeline indexing **300k+ pages** with robots.txt compliance, language filtering, and multi-signal (TF-IDF, cosine similarity, PageRank) ranking achieving **sub-50ms** query latency

Ensemble Models for Personal Expenditure Forecasting | *PyTorch, LSTM, N-BEATS, LangGraph*   Apr. 2025
- Improved expenditure forecasting accuracy by **6% (MASE)** by developing a custom ensemble over LSTM, N-BEATS, and dense networks
- Built an agentic system to generate high-fidelity financial data spanning **24 attributes across 37 categories**
- Authored "Synthetic Data Generation and Neural Ensemble Architectures for Personal Expenditure Forecasting" **(Accepted, IEEE INDISCON 2025)**

InvoiceGPT: Agentic Invoice Processing | *LangGraph, AWS (S3, RDS), TesseractOCR, Streamlit*   Dec. 2024
- Reduced manual invoice review time by **70%** and achieved **95% OCR accuracy** by building an AI-driven invoice processing platform using Tesseract/OpenAI on AWS
- Reduced query resolution from **minutes to seconds** by developing a LangGraph-powered conversational and visual agent for natural language financial analytics

TECHNICAL SKILLS

Programming Languages: Python, SQL, Java, TypeScript, JavaScript, C/C++
AI/ML: PyTorch, TensorFlow, NumPy, Pandas, OpenCV, Hugging Face, LangGraph/LangChain, LangSmith
Web Development & APIs: React, Next.js, Django, Flask, FastAPI, Streamlit, Tailwind CSS, REST APIs, Postman
Cloud, Databases & DevOps: AWS, GCP, Azure, PostgreSQL, ChromaDB, Docker, Git/GitHub, GitHub Actions