

# Minakshee Narayankar

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Eligible to work in the UK under the **Graduate visa route** (no employer sponsorship required)

## PROFILE

Applied AI Engineer and Imperial College London MSc Computing (AI & ML) graduate, **immediately available**, with **3+ years of experience** building and deploying production AI/ML systems for enterprise clients. Experienced in taking **AI prototypes to production** through Python/FastAPI services, REST APIs, data pipelines, PostgreSQL, MLOps, Infrastructure as Code, CI/CD, Kubernetes, monitoring, and security controls. Hands-on experience delivering scalable AI solutions across **banking, insurance, and enterprise environments**, with a strong focus on reliability, operational readiness, and cross-functional delivery.

## EDUCATION

### Imperial College London, United Kingdom

(Sep 2025 – Sep 2026)

MSc in Computing (Artificial Intelligence & Machine Learning)

Grade: **Distinction**

- **Relevant Modules:** Software Engineering for Machine Learning Systems, Scalable Systems and Data, Machine Learning Systems & Hardware, Formal Methods for Safe AI, Introduction to Machine Learning, Generative AI, Deep Learning.
- **MSc Individual Project** supervised by **Dr. Matthew Wicker**: *Amortized Trustworthiness: Training Small Language Models as real-time cross-model Semantic Uncertainty Proxies for Large Language Models*
- **Activities & Societies:** Served as **Head of Technology** at **Imperial AI Society**, leading technical infrastructure and coordinating technology-focused industry engagement for the student community.

### University of Mumbai, India

(Jul 2018 – Jul 2022)

Bachelor of Engineering in Computer Engineering

CGPA : **9.78/10**

- **Academic Distinction:** Ranked **1st university-wide** in Database Management Systems, Computer Networks, and System Programming & Compiler Construction.
- **Relevant Modules:** Software Engineering, Python, C/C++, Object Oriented Programming, Data Structures & Algorithms, Advanced Algorithms, Operating System, Database Management Systems, Web Design Lab, Computer Networks, Distributed Computing, Artificial Intelligence, Machine Learning, Natural Language Processing, Cloud Computing.
- **Activities & Societies:** Served as a **Technical Team Member** at **IEEE-VIT**; led technical seminars, mentored junior students, and contributed to the IEEE-VIT committee website.

## PROFESSIONAL EXPERIENCE

### Tata Consultancy Services, India

(Jul 2022 – Aug 2025)

Applied AI Engineer

- **Designed** and developed an **agentic AI Knowledge Hub Assistant** deployed in **production** for a European car insurance client in an **Agile** environment, reducing query resolution time by **60%**.
- **Built REST APIs** in **Python** using **FastAPI**, integrated them with the **ReactJS frontend**, and implemented **OAuth authentication**, handling **200+** daily queries.
- Integrated **PostgreSQL** for application data and **Milvus** for vector search across **50,000+** documents; integrated **Azure OpenAI** and open-weight **LLMs** served with **vLLM** into the application.
- **Tested** REST APIs and application logic through **unit and integration tests** using **pytest**, with **GitLab** repositories supporting **version control** and code reviews.
- Containerised and **deployed the agentic AI application** using **Docker** and **Azure Kubernetes Service (AKS)**, supporting scalable and reliable operation in the production environment.
- Built a reusable **AI governance framework** using **Terraform Infrastructure as a code** **GitLab CI/CD** to standardise governance-related infrastructure and policy releases, reducing deployment time by **90%**.
- Implemented **AI security guardrails** enforcing **RBAC** and **PII/sensitive-data** validation for user inputs and model outputs, applying runtime controls through **Azure APIM** and Azure Content Safety with **sub-50 ms latency** overhead.
- Configured and monitored backend services using **Prometheus** and **Grafana**, surfacing application metrics and service health across the deployed environment.
- Delivered regular **technical demonstrations** to non-technical **client stakeholders** at the end of Agile sprints, communicating implemented features, engineering progress, and technical outcomes.
- Collaborated with **4+ engineering and research teams** for **banking, airline, and insurance clients**, contributing to **system design**, conducting code reviews, mentoring juniors to deliver software solutions.

- Built a Python-based **data processing pipeline** for the PF document submission workflow, using Table Transformers and TrOCR to convert unstructured document images into structured outputs for **2,000+ employees**, achieving **90% straight-through processing**.

**Vidyalankar Institute of Technology, India**

(May 2020 – Jul 2020)

*ML Intern*

- Developed and deployed **VBot**, the official admissions chatbot for VIT's website, integrating the Dialogflow application into the web interface for prospective student enquiries.
- Designed **200+ admission query flows** using Dialogflow intents and entities, implementing conversational logic and rich responses with text, images, videos, and hyperlinks.

## PROJECTS

**Real-Time ML Inference System for AKI Detection** | [GitHub](#) | *ML System Design, Azure* (Jan 2026 – Mar 2026)

- Designed the **system architecture** for a **real-time ML system** to detect Acute Kidney Injury (AKI) in hospital patients, integrating a LightGBM classifier with streaming patient data and triggering **hospital alerts** on positive predictions.
- Built a **reliable, fault-tolerant** real-time processing pipeline with robust **error handling** and **failure recovery**, achieving **p90 latency of 3–4 ms** against a 3-second SLA with **no missed AKI cases** across **1,600** patient-data messages.
- Collaborated in a **4-member team** using **Git** for version control and shared codebase management, and developed automated **unit and integration tests** with pytest and end-to-end system validation.
- Containerised and **deployed** the system using **Docker** and **Azure Kubernetes Service**, automated testing through **GitLab CI**, and implemented **Prometheus monitoring** for system health and performance.

**Amortized Trustworthiness: SLM Uncertainty Proxies for LLMs** | [GitHub](#) | *PyTorch, PEFT* (Apr 2026 - Sep 2026)

- Engineered a reusable **dataset generation pipeline** in PyTorch across **13 LLMs (7B-27B)**, including stochastic generation, **hidden-state feature extraction**, and DeBERTa entailment clustering to compute **semantic entropy**.
- **LoRA fine-tuned Llama-3.2-3B** models using **PEFT** on text and LLM hidden-state features to **predict uncertainty of LLM's responses**, comparing them against linear probe, ridge, and representation-alignment baselines.
- Evaluated models using a **leave-one-LLM-out** protocol, achieving **0.801 AUROC** versus **0.698** linear-probe and **0.729** aligned-ridge baselines on held-out models, with **0.791 AUROC** on unseen Qwen/Gemma models.
- Generalised from in-domain TriviaQA to out-of-domain **SQuAD dataset** without retraining while reducing uncertainty estimation from 11 LLM passes to a single proxy pass, cutting latency by **13.7×** and compute by **11.5×**.

## TECHNICAL SKILLS

- **Programming & Data:** Python, SQL, NumPy, Pandas
- **Backend & Web:** FastAPI, REST APIs, Flask, Django, ReactJS, OAuth
- **Databases & Search:** PostgreSQL, SQLite, Milvus, FAISS
- **Cloud & MLOps & Infrastructure:** Azure, AWS, Docker, Kubernetes, Azure Kubernetes Service (AKS), Terraform, Gitlab CI/CD
- **Testing & Observability:** Git, GitHub, pytest, Postman, Linux, Prometheus, Grafana
- **AI & ML:** PyTorch, scikit-learn, Transformers, Agentic AI, LangGraph, LangChain, MCP, RAG, vLLM, LoRA/PEFT
- **AI-assisted development:** Claude-code, Codex

## CERTIFICATIONS

- **AWS Certified Cloud Practitioner** | [Verified Credential](#) (Aug 2024)
- **Microsoft Certified: Azure AI Fundamentals (AI-900)** | [Verified Credential](#) (Feb 2025)

## AWARDS & ACHIEVEMENTS

- **1st Prize, Imperial Hackathon** (Nov 2025)  
Designed and built a **study peer-matching application** in a **4-person team**, using student learning data and behavioural patterns to recommend suitable study partners and securing first place.
- **TCS Excellence Awards** (2024)  
Received an **individual excellence award** for developing a time-series POC and **client-nominated team awards** for delivering production-ready software solutions.