

KUSHAGRA GOYAL

+91 8800739389 ✉ kushagraoyal675@gmail.com [LinkedIn](#) [GitHub](#)

EDUCATION

Symbiosis Institute of Technology
Bachelor of Technology in Computer Science & Engineering

Pune, MH
July 2023 – June 2027

EXPERIENCE

Paws Care Animal Resq(NGO) (Play Store)

Software Developer Intern

Pune, MH
July 2025 – Mar 2026

- Engineered a cross-platform adoption app in **Flutter** and **Firebase**, integrating real-time databases and cloud storage for pet management.
- Implemented Google Sign-In and secure end-to-end adoption workflows, resulting in a seamless, high-performance user experience.
- Collaborated on UI/UX optimization and unit testing to ensure high reliability for community and profile modules.

PUBLICATIONS & SCIENTIFIC RESEARCH

Adaptive Quantum-Enhanced Learning (NISQ Era)

AIMLSystems 2025

- Authored a hybrid framework for robust QML; presented in 5th International Conference on AI-ML-Systems and published in **IEEE Xplore** (Scopus-indexed).

Adaptive PQC Key-Encapsulation for Multipath QUIC Telemetry

SCI 2026 (Accepted)

- Designed a quantum-resilient multipath QUIC framework with **learning-based routing** and adaptive FEC for low-latency telemetry.

LLM-Based Courtroom Simulation for Indian Civil Law

SCI 2026 (Accepted)

- Proposed a multi-agent RAG framework using the **Indian Kanoon corpus** for adversarial legal proceedings simulations.

Neural Ricci Flow: Curvature-Constrained SSL Regularizer

(Under Review)

- Proposed a regularizer using **Sinkhorn OT** to prevent manifold collapse, improving accuracy by **+5.2%** with low overhead.

RESEARCH & TECHNICAL PROJECTS

Medical-to-Medical Image Generation via Deep Learning | IIT BHU

Jan 2026 – Present

- Developing high-fidelity Medical-to-Medical synthesis models using **Generative AI (GANs) and other** to enhance medical modality translation.

Simple Operator: PQC-Safe Async Transfer Pipeline | Rust, LZ4

Nov 2025 – Dec 2025

- Built an asynchronous pipeline in **Rust**, increasing throughput by **30%** and reliability by **40%** over unstable links.
- Integrated **CRC32** checks and PQC key exchange, reducing secure payload size by **20–25%** via LZ4 compression.

MedDo: Adaptive Clinical Case Platform | Python, Pinecone

Aug 2025 – Oct 2025

- Developed a LeetCode-style platform for USMLE; integrated **Pinecone semantic retrieval** for auto-assessing free-text answers.
- Deployed 1,000+ curated cases, reducing student preparation time by approximately **35%** through adaptive feedback.

Lex Orion: Agentic AI Courtroom Simulator | LangGraph, RAG

Jan 2025 – April 2025

- Assigned agentic AI roles (judge, lawyers) to replicate civil law trials; automated argument extraction from **300+ case files**.
- Reduced legal research time by **15 hours per case** and enabled faster, realistic trial workflow analysis.

AURA 1.0: IoT Risk Analyzer

Aug 2024

- Utilized **DHT11, LDR, ultrasonic, MQ135, and MQ3** sensors with **Reinforcement Learning** to optimize hazard detection.

HONORS & ACHIEVEMENTS

- **Microsoft Copilot Challenge Winner (2024)**: Ranked 1st among 2,000+ participants in a 4-week Generative AI challenge.
- **HACKFEST 2.0 2026**: Runner Up for "Data Policy Compliance Agent" among 3500+ participants (GDG New Delhi & Turgon AI).
- **Tempo Builder Hackathon 2026**: Finalist (Top 5) for Autonomous Merchant Finance system using **Agentic transaction monitoring**.
- **x402 Protocol Hackathon 2026**: Top Ranking for a decentralized AI marketplace with smart-contract micropayments on **Aptos**.
- **TrackShift Hackathon 2025**: Finalist for "Smart File Transfer System" (Haas MoneyGram F1 Team & Mphasis).

TECHNICAL SKILLS

AI & Machine Learning: Generative AI (GANs), Agentic AI, Multi-Agent Systems, RAG, LangChain, LangGraph, PyTorch, RL

Specialized Systems: Post-Quantum Cryptography (PQC), Network Protocols (QUIC), Quantum ML (NISQ Era), Vector DB (Pinecone)

Languages: C++, C, Python, Rust, Dart, SQL, Bash, HTML/CSS, Java

Developer Tools: Docker, Firebase, Git, React, Node.js, Express.js, MongoDB, REST APIs, Workflow Automation