

Pranav Joshi

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EDUCATION

MIT World Peace University

Pursuing B.Tech, Computer Science & Engineering (Third year)

Oct. 2027

Pune, MH

- 8.11/10 CGPA
- Research Head, BizTech Club | Member, Cosmos Club

EXPERIENCE

C-DAC Pune

Research Mentee under Dr. Amit Saxena

Jun. 2025 – Jan. 2026

Pune, IN

- Co-authored and published research on quantum ML models for breast cancer diagnosis using IBM Qiskit on WDBC dataset (569 samples, 30 features), achieving 95.6% accuracy with QSVC; benchmarked against classical SVMs — **IEEE ICICIS 2025**
- Co-authored and published a comparative and bibliometric analysis of 6 post-quantum cryptographic algorithms across lattice, hash, and code-based schemes, spanning 20+ years of PQC research — **IEEE Punecon, Scopus Indexed**

PROJECTS

Monsoon Precipitation Prediction Using Ensemble ML [Published: ICTCS 2025]

- Compared multiple models' performance (Ridge, XGBoost, Gradient Boosting, Random Forest) on 513 months of climate data achieving 0.13 R^2 and 12.14mm average error; engineered 20 lagged features from Bay of Bengal SST, Arctic ice, and Niño 3.4 indices
- Validated Arctic-monsoon teleconnections through feature importance analysis; implemented time series cross-validation

SAR Image Colorization Using Deep Learning: Smart India Hackathon National Round 2024

- Designed conditional GAN with U-Net generator for SAR satellite image colorization; advanced to national round of Smart India Hackathon 2024

MITWPU AWS Hackathon: University Level | Winner, 2025

- Won university-wide MIT-WPU Hackathon 2025 by designing FarmLink — a serverless AWS-based agri marketplace using API Gateway, Lambda, RDS, DynamoDB, S3, and SageMaker; justified full CloudFormation architecture to a technical jury

Gravitational Wave Detection Using Deep Convolutional Networks

- Developed CNN for binary black hole merger detection in simulated LIGO strain data; implemented spectrogram preprocessing pipeline and trained on 2000+ synthetic waveforms generated using PyCBC achieving 94% detection accuracy
- Integrated physics-informed loss function incorporating chirp mass constraints to reduce false positives; validated model on realistic noise profiles demonstrating robust signal identification for astrophysics applications

TECHNICAL SKILLS

Languages: Python, C++, SQL

Frameworks: Scikit-Learn, NumPy, Pandas, PyTorch, Qiskit

Dev Tools: Git, Linux, AWS, Docker