

Ashim Dhor

+91 7086482909 | ashim21@iiserb | [ashimdhor2003](#) | [LinkedIn](#) | [GitHub](#) | [References](#)

EDUCATION

Indian Institute of Science Education and Research Bhopal <i>BS-MS in Data Science and Engineering, CPI: 6.75/10</i>	Madhya Pradesh, India <i>Dec. 2021 – Present</i>
Vivekananda Kendra Vidyalaya, Dibrugarh <i>Higher Secondary, Percentage: 95.16 %</i>	Assam, India <i>2019 – 2021</i>
Vivekananda Kendra Vidyalaya, Dibrugarh <i>Secondary, Percentage: 91.2 %</i>	Assam, India <i>2019 – 2021</i>

EXPERIENCE

Master's Thesis, IISER Bhopal <i>@Biomedical Data Science Lab, PI - Dr. Tanmay Basu</i> <ul style="list-style-type: none">Currently working on whole slide image (WSI) analysis in collaboration with Jawaharlal Nehru Cancer Hospital and Research Centre (JNCHRC), Bhopal and All India Institute of Medical Sciences (AIIMS) Bhopal to develop a novel WSI dataset focused on Head and Neck Cancer.Developing and evaluating trustworthy Vision-Language Models (VLMs) for high-stakes cancer diagnostics, with a focus on ensuring output safety and reliability.Analyzing VLM failure modes, implementing rigorous stress-testing and validation protocols to identify and resolve model failures against ambiguous and out-of-distribution inputs.	May 2025 - Present
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BS Thesis, IISER Bhopal <i>@Biomedical Data Science Lab, PI - Dr. Tanmay Basu</i> <ul style="list-style-type: none">Developed a deep learning framework for gland segmentation to address the critical issue of overconfident predictions in histopathology images, aiming to improve diagnostic trust by quantifying model and data uncertainty.Architected the solution using a UNet++ backbone and integrated a dual uncertainty - quantification mechanism.	Jan. - April 2025
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[Presentation](#) , [Report](#)

Research Internship, QWorld <i>Fraud Detection using Quantum Machine Learning</i> <ul style="list-style-type: none">Architected a Quantum Graph Neural Network (QGNN) that uses Topological Data Analysis (TDA) to process transactions as graphs and a Variational Quantum Circuit (VQC) to enhance feature learning.Established a performance baseline using a classical GraphSAGE model, which achieved 92.4% accuracy and a 0.77 Precision-Recall AUC on the fraud detection task.Demonstrated a quantum advantage by validating that the proposed QGNN significantly outperformed the classical benchmark, achieving a superior accuracy of 94.5% and a Precision-Recall AUC of 0.85.	June - Sept. 2023
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[Our team received the Best Project and Best Presentation Award, Presentation](#)

PROJECTS

Precision Oxygen Detection with AO-09 Sensor and ML Linearity Enhancement <i>OpenReview, GitHub</i> <ul style="list-style-type: none">Contributed to the second version of the PAWAMAAN Smart Air Quality Monitoring System by adding oxygen concentration detection capability.Employed ESP32C3 microcontroller for analog-to-digital conversion, improving sensor data accuracy.Designed and fabricated a custom 3D-printed casing for robust deployment of the system.	<i>Feb 2023</i>
Credit Risk Management and Bank Profitability <i>GitHub</i> <ul style="list-style-type: none">Analyzed Indian public banks using CMIE data with statistical models in R/Python.Built visualizations to show link between credit policy and profitability.	<i>April 2023</i>
CPCR: Proxy-based Contrastive Replay for Continual Learning <i>Report</i> <ul style="list-style-type: none">Implemented continual learning with Proxy-based Contrastive Replay on CIFAR-100.Achieved 8.62% end accuracy, showing improved retention.	<i>Sept. 2023</i>

TECHNICAL SKILLS

Languages: Python, C, C++, SQL, HTML, MATLAB, STRATA, Qiskit
Softwares: MS Office, LaTeX, Discord, Anaconda, Virtual Box, GPT
Frameworks: Mathematica, WordPress, Linux(OS), Windows(OS)
Developer Tools: Git, Visual Studio, PyCharm

PUBLICATIONS

Innan, Nouhaila, Abhishek Sawaika, **Ashim Dhor**, Siddhant Dutta, Sairupa Thota, Husayn Gokal, Nandan Patel, Muhammad Al-Zafar Khan, Ioannis Theodonis, and Mohamed Bennai. **“Financial fraud detection using quantum graph neural networks.”** *Quantum Machine Intelligence*.

An Uncertainty-Aware Deep Learning Model for Gland Segmentation in Histopathology Images
Accepted at IndoML 2025: The Sixth Indian Symposium on Machine Learning, BITS Pilani Hyderabad Campus
Journal submission under review

Topo-GraT: Learning to Grow with Causal Graph Transformers
Under review at AAAI-26 Student Abstract

HTG-MIT: AI-Powered Cancer Detection in Medical Images Using Structure-Aware Deep Learning
Under review at AAAI-26 Student Abstract

REFLEXION: Language Models that Think Twice for Internalized Self-Correction
Under review at ICLR 2026

ACHIEVEMENTS

National Bio Entrepreneurship Competition (NBEC) 2025
Selected for the second round for [HistoAI](#), an ideathon concept for an AI-powered diagnostic tool that quantifies uncertainty in cancer segmentation

Received Best Project and Best Presentation Prize
QIntern Internship

POSITION OF RESPONSIBILITY

The AHLI Machine Learning for Health (ML4H) Symposium 2025
*Selected as a **Reviewer*** *August 2025*

Sports Council
Sports Secretary, IISER Bhopal *Aug. 2023 – Aug. 2024*

Institute Career Development and Placement Council (ICDPC)
Student Placement Head, IISER Bhopal *June 2022 - May 2023*

MUN’23 (Model United Nations, IISERB)
Photographer *May 2022*