

# Muhammad Ibrahim Khan

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Coventry, United Kingdom

## EDUCATION

### • Coventry University

Sep 2024 - Present  
Coventry, United Kingdom

*Doctor of Philosophy (PhD) in Reinforcement Learning*

- Thesis: Predictive Control Through Monte Carlo Tree Search
- Expected Graduation: March 2028

### • National University of Sciences and Technology

Sep 2019 - Jun 2023  
Islamabad, Pakistan

*Bachelor of Engineering (BEng) in Mechanical Engineering*

- Project: Autonomous Weeding Robot

## RESEARCH PUBLICATIONS

### • Learning from Less: SINDy Surrogates in RL. (ICLR 2025)

DOI: [10.48550/arXiv.2601.18123](https://doi.org/10.48550/arXiv.2601.18123)

### • Deadline-Aware, Energy-Efficient Control of Domestic Immersion Hot Water Heaters. (AAAI 2026)

DOI: [10.48550/arXiv.2504.18113](https://doi.org/10.48550/arXiv.2504.18113)

## WORK EXPERIENCE

### • Coventry University

Aug 2025 - Jan 2026  
Coventry, United Kingdom

*Teaching Assistant and Lab Demonstrator*

- Delivered weekly labs for 30+ MSc Data Science students in Deep Learning and Computer Vision module.
- Graded 200+ assignments per semester, providing detailed feedback.
- Collaborated with faculty to improve course materials and delivery, enhancing the overall learning experience.

### • CureMD

Jul 2023 - Sep 2024  
Lahore, Pakistan

*Associate AI Engineer*

- Architected and deployed in-house LLM-powered code assistant using RAG with Mixtral 8x7B that reduced the code review time by 25%+ across 150+ developers.
- Fine-tuned LLMs on proprietary codebase to create domain-specific chatbot for software specialists, enhancing internal knowledge sharing and productivity.
- Deployed production RAG-based chatbot processing 500+ daily customer queries with 80% faster response time and 92% resolution accuracy.
- Automated code grading using Llama 3, evaluating 100+ candidates in under one minute through logic analysis and black-box testing, streamlining the recruitment process.
- Developed ML/DL solutions for internal productivity and US healthcare industry products, contributing to the company's innovation pipeline.

## TECHNICAL SKILLS

- **Programming Languages:** Python (expert), C++, MATLAB
- **ML/DL Frameworks:** PyTorch, TensorFlow, Keras, Scikit-learn, OpenCV, Hugging Face Transformers
- **RL Frameworks:** Stable Baselines3, RLLlib, Gymnasium, MuJoCo
- **Data Science:** NumPy, Pandas, Matplotlib, Seaborn, Plotly
- **LLM & NLP:** Langchain, RAG, Fine-tuning (LoRA)
- **DevOps & Tools:** Git, Docker, Linux, Jupyter, Weights & Biases, TensorBoard

## HONORS AND AWARDS

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- **Fully Funded PhD Scholarship**

Sep 2024

*Coventry University*

- Awarded a fully-funded PhD studentship at the Centre of Computational Science and Mathematical Modelling (CSMM).

- **Second Runner-Up, Prime Minister's National Innovation Award 2023**

Jul 2023

*Government of Pakistan*

- Awarded 2nd Runner-Up among 40,000+ national submissions for "Autonomous Weeding Robot" demonstrating innovation at the national level.

## REFERENCES

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References available upon request.