

Yasser Qureshi

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I am a self-driven and detail-oriented PhD candidate at the University of Warwick, combining an engineering background with strong analytical and problem-solving skills. I excel in applying innovative thinking to complex challenges and thrive in dynamic, solution-focused environments.

EDUCATION

University of Warwick

Coventry, UK

Doctor of Philosophy (PhD) in Engineering – Exploring Mosquito behaviour through Machine

2021-Present

Learning methods

- Developed signal processing techniques to extract informative features from multivariate time-series data.
- Designed and implemented machine learning pipelines utilising advanced models, including random forests, XGBoost and Transformers.
- Applied Explainable AI techniques to interpret model predictions, uncovering insights into mosquito behaviour.
- Published findings in peer-reviewed journals and presented at conferences.

Bachelor of Engineering (BEng) – Systems Engineering – First Class Honours

PROFESSIONAL EXPERIENCE

ATMOSPHERE - Forecasting Seizures in Epileptic Patients

Remote, UK

Research Assistant

2023-Present

- Leading the development of the machine learning pipeline that harnesses data from wearable devices to predict the likelihood of seizures occurring in epileptic patients.

University of Warwick

Coventry, UK

Graduate Teaching Assistant

2021-Present

- Supported modules including: ES2C4 Computer architecture and Systems and ES190 Dynamics and Thermodynamics.
- Demonstrated teaching and mentorship skills by supervising 5 undergraduate dissertation projects.

IBM

Hursley, UK

Technical Extreme Blue Intern

2021

- Selected as 1 of 16 interns from over 10,000 applicants for IBM's prestigious Extreme Blue program.
- Built a full-stack application featuring a 3D digital twin of client factories and prototyped a digital card for Google Wallet to store vouchers from recycling efforts.
- Utilised a diverse tech stack including VueJS, BabylonJS, NodeJS, Flask, Cloudant, and MQTT protocols.

Warwick Data Science Society

Coventry, UK

Outreach and Talks Officer

2019-2021

- Successfully developed, organised, and hosted multiple virtual events, including around 35 events/talks.
- Collaborated with over 49 speakers from a diverse set of industries to provide insight into data science careers.

PUBLICATIONS

- Interpreting Time-Series Machine Learning Models through Domain-Informed Basis Functions** *October 2024*
Under Review
- Discrimination of inherent characteristics of susceptible and resistant strains of *Anopheles gambiae* by explainable Artificial Intelligence Analysis of Flight Trajectories** *October 2024*
Under Review
- Trends in Chemical Sensors for Non-Invasive Breath Analysis** *May 2024*
Published – TrAC Trends in Analytical Chemistry
- A ‘weather forecast’ for seizures. Artificial intelligence To Optimise Seizure Prediction to Empower people with Epilepsy (ATMOSPHERE): Proof-of-concept mixed-methods research** *February 2024*
Published – JMIR Research Protocols
- Double Vision: 2D and 3D Mosquito Trajectories can be as Valuable for Behaviour Analysis via Machine Learning** *November 2023*
Published – Springer Nature – Parasites & Vectors
- Finding a Husband: Using Explainable AI to Define Male Mosquito Flight Differences** *March 2023*
Published – MDPI Biology – Machine Learning Applications in Biology

PROJECTS

- AI-Driven Classification of Bacterial Infections from Breath Samples** *March-Present*
- Leveraging gas chromatography ion mobility spectrometry (GC-IMS) data to classify bacterial infections from breath samples.
 - Designed and implemented a robust, adaptable machine learning pipeline in Python to analyse GC-IMS data across diverse applications.
- Power-of-10 API: Open-Source Library for UK Athletics Data** *2021*
- Created an open-source Python library to parse and retrieve data from Power of 10, the UK athletics performance database.
 - Published on PyPI (Python Package Index), enabling easy integration and widespread adoption by developers and researchers.
- Sneaker Monitors: E-commerce Monitoring & SaaS Business** *2020*
- Created a suite of tools to monitor e-commerce sites, providing real-time notifications for restocks and releases, earning 450+ GitHub stars and building a thriving community of 2,500+ active users and contributors.
 - Established and scaled a SaaS business, generating up to £1,000 per week at its peak, leveraging web scraping tools.
 - Managed end-to-end operations, including server infrastructure, tool hosting, and community engagement, driving growth and sustaining high user satisfaction.