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

PaperMatch: Tinder-Style Academic Paper Recommender   *October-Present*

- Developed "PaperMatch," a Flask app with a swipe-based for discovering Arxiv papers.
- Designed a custom recommendation system using scoring algorithms for categories and authors.

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.

Sneaker Monitors: E-commerce Monitoring & SaaS Business   *2020-2022*

- 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.