Dr Ahmad Aladawi

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PROFESSIONAL SUMMARY

Machine learning researcher with a PhD specialising in healthcare AI applications and IoT systems. Proven track record developing and deploying digital health solutions, including an NHS eye-blink switch system (50+ patients, 95% satisfaction) and a personalised dementia control system (25% increased engagement). Skilled in Python-based ML development using Pandas, Keras, TensorFlow, and scikit-learn, with experience in real-time decision support systems and sensitive healthcare data management. Published researcher with competitive awards (first place twice in ASHRAE PhD competitions) and effective educator achieving 4.8/5 student satisfaction in postgraduate data science modules. Strong collaborative skills across multidisciplinary teams, committed to translating academic innovation into practical AI technologies that deliver measurable health impact.

EDUCATION

1. PhD in machine learning at Loughborough University (Jan 2021 – Jul 2025)
2. **Distinction** MSc in Internet of Things (IoT) with from Bournemouth University (Jan 2019 – Jun 2020)
3. **First-class honours** BSc in Computer Science (Jul 2013 – Jan 2017).

WORK EXPERIENCE

1. **Research associate in data science for digital twin** Loughborough University (Oct 24 - Present)
   - Design and deploy IoT networks, implement data fusion techniques, and create a digital twin system using machine learning models to support flight operations.
   - Develop and apply machine learning models for system-level analysis, focusing on IoT networks and real-time decision support systems.
   - Contribute to research projects involving IoT applications and advanced data analysis techniques, enhancing the department's capabilities in smart technologies.
2. **Researcher in computer science** Loughborough University (Sep 2021 – Sep 2024)
   - Developed and delivered engaging lectures and lab sessions that effectively communicated complex computer science concepts (i.e., MATLAB and Python programming) to both undergraduate and master's students, resulting in a 15% improvement in student learning outcomes (i.e., first-time pass rate).
   - Consistently received excellent student feedback, with an average course evaluation score of 4.8/5, demonstrating a strong commitment to student success.
   - Led the machine learning initiatives that increased user engagement by 25% through the development of a personalised dementia control system.
   - Consistently received excellent student feedback, with an average course evaluation score of 4.8/5 in programming for data science (COP504) and object-oriented programming (COA256) modules, demonstrating a strong commitment to student success.
3. **Machine Learning Engineer** at University Hospitals Dorset NHS, Bournemouth (Jan 2020 – Jan 2021)
   - Designed, created, and developed a novel eye-blink switch which significantly improved the quality of life for over 50 patients with limited mobility, enabling them to independently control their environment. The switch was created using a Raspberry Pi 4 connected to a camera to capture eye blinks, and a relay to control the light based on the recognised eye-blink patterns.
   - Collaborated closely with healthcare professionals to ensure the eye blink switch system was intuitive and user-friendly, leading to a 95% satisfaction rate among patients.
   - Produced comprehensive technical reports which effectively communicated the project's progress and outcomes to the team, contributing to the successful implementation of the environmental control systems.

PUBLICATIONS

- AW Abdulraheem, M Arafah, A Aladawi (2025) "***Intelligent Age Group Classification System for Animated Films Using Hybrid Machine Learning Models***". In 2025 1st International Conference on Computational Intelligence Approaches.
- G Al-Hyasat, M Arafah, L Karadsheh, A Aladawi (2025) "***Enhanced Stroke Prediction Through Autoencoder-Based Feature Compression and Ensemble Classification***". In 2025 1st International Conference on Computational Intelligence Approaches.
- M Arafah, A Aladawi, L Karadsheh (2025) "***Cybersecurity for Autonomous Electric Vehicles (EVs)***". In AI-Driven Security Systems and Intelligent Threat Response Using Autonomous.
- A Ehab, A Aladawi, G Burnett (2025) "***Exploring AI-Integrated VR Systems: A Methodological Approach to Inclusive Digital Urban Design***". In Environments, 39, 40.
- M Arafah, AK Al-Banna, A Aladawi (2025) "***Detection and Analysis of AI-Generated Malicious Content***". In Examining Cybersecurity Risks Produced by Generative AI, pp.235-276.
- Aladawi, A, Roberts, BM, Hogervorst, E, Cook, M (2023) "***Indoor environmental quality studies***". In Halsall, B, Riley, M, Hogervorst, E (ed) Design for Dementia, Routledge, pp.138-153, ISBN: 9781003306054. DOI: 10.1201/9781003306054-8.

AWARDS AND ACHIEVEMENTS

- Won **first place, twice,** in the American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) PhD competitions in 2021 and 2022.
- Won an "Excellent Prize" for the PhD Video Challenge 2022 in the "Buildings and Cities" Journal.

SELECTED DEVELOPED PROJECTS

- A novel machine learning thermal comfort model
- Interactive Power BI dashboards.
- A novel eye blink system using IoT Technologies.
- Survival (A flutter mobile application).
- Smart Camera System.

PROFESSIONAL MEMBERSHIPS

- Professional member of the British Computer Society (membership number: 995146437).
- Member of IEEE (membership number: 100104526).

COURSES TAUGHT

Postgraduate:

- Programming for data science (COP504).
- Programming for specialist applications (COP501).
- Network monitoring and management (WSP019).

Undergraduate:

- Introduction to programming and databases (COA122).
- Web programming (COA123).
- Object-oriented programming (COA256).
- Databases (COA201).
- Collaborative practice in the built environment (CVA103).

VOLUNTEERING

- Software Engineer (Weekends only) AbilityNet (Jan 2022 – Present).
  Visiting older people in their homes and solving their IT challenges and technological issues.

- Web Developer Loughborough University (Jan 2022 – Present).
  Designed and created acting-research.lboro.ac.uk and organised its events.
- Side-by-Side Volunteer (Weekends only) Alzheimer's Society (Jun 2021 – Jun 2024).
  Calling people with dementia on a weekly basis and checking up on them.

CONFERENCES ATTENDED

- AI and the human conference, Berlin, Germany, May 2022.
- Dementia Research Conference, Nottingham, UK Feb 2022.
- Home UK Conference, London, UK Nov 2021.
- Advanced Engineering Conference Birmingham, UK Sept 2021.
- Code Elixir LDN Conference, London, UK, July 2019.

SKILLS

- Experienced in employing innovative teaching methods and assessment strategies, including case studies and collaborative projects, to foster student engagement and enhance learning outcomes in different computer science courses.
- Data analysis skills including cleaning, analysing, and visualising large data from different sensors.
- Professional skills in developing machine learning models using Python and libraries such as Pandas, Keras, and TensorFlow, and deploying in different forms such as stand-alone software or embedding them in IoT systems.
- Competent in producing technical reports and authoring academic papers.
- Effective in working within multi-disciplinary teams across various locations.
- Strong organisational skills for managing resources and project plans.
- Excellent interpersonal skills for presenting findings and engaging with stakeholders.

SELECTED COURSES ATTENDED

- Essentia Teaching Skills in Higher Education.
- Linux Internal and System Programming from UTL Technologies.
- Robotics App Using Arduino.
- Drupal 8 Site Building.
- Data science course from Data Camp.
- Essential teaching skills course.
- Professional Project Management from Cambridge University.
- IO boot camp (100 hours training course).

DRIVING LICENSE

- Full UK driving license.

References are available upon request.