

AMMAR AL-BAZI, BSc(Hons), MSc, PhD

Associate Professor in Operations and Supply Chain Simulation

BUSINESS SIMULATION SPECIALIST

College of Business and Social Sciences, Aston Business School, Operations and Information Management Department, Aston University, UK

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PROFESSIONAL SUMMARY

I am a Proactive and Meticulous Senior Lecturer (Associate Professor) and expert researcher with over 15 years of leading experience supporting numerous departments in consultancy, education, and research with their large-scale projects. In this vast professional experience, my expertise lies in delivering and developing high-quality, engaging lectures and tutorial sessions for a wide range of specialised modules at UG and PG levels, including Business Simulation, Manufacturing Simulation, Logistics Business Simulation, Business Analytics in Practice, and Digital Manufacturing Optimisation and Simulation modules. I have 12 years of research experience working in simulation and optimisation areas that helped design around 14 specialised simulation and optimisation modules. My Professional traits include but are not limited to Renewable Energy, Operations Planning and Control, Demand-Side Management, *Artificial Intelligence, Digital Transformation, and Blockchain*.

HIGHER EDUCATION AND PROFESSIONAL QUALIFICATIONS

Coventry University, UK

July 2018 Senior Fellow of the Higher Education Academy (SFHEA)

Sept 2012 Fellow of the Higher Education Academy (FHEA)

Postgraduate Certificate in Higher Education (PGCert)

Teesside University, UK

2005-2010 PhD in Simulation and Optimisation

Thesis Title: Using Simulation-Based Genetic Algorithm to Solve Complex Crew Allocation Problems in Labour-Intensive Industries

2007 University Certificate in Advanced Professional Development (UCAPD)

2008 University Certificate in Professional Development (UCPD)

EMPLOYMENT

2023- **University of Wales Trinity Saint David**

External PhD Supervisor and Examiner

2022-2025 **Lancaster University, UK**

External Examiner of Logistics and Supply Chain Management, Lancaster University

Dec 2022- **Aston University, Birmingham, UK**

Associate Professor (Senior Lecturer) of Operations and Supply Chain Simulation

2011-2022 **Coventry University, UK**

2019-Present Research Associate (20%) - Institute for Clean Growth and Future Mobility (Secondment)

2011-2022 Assistant Professor of Business Information Systems

GRANTS (FUNDED PROJECTS), AWARDS & HONORS

- £202,955, KTP partially funded by Innovate UK. Collaboration between Aston University and Protaform Springs and Pressings Ltd., Sept April 2023 - Sept 2025. Partnership: KTP22_23R5. Lead Academic/Co-Principal Investigator (the second). Total contribution is 20%.
- £162,465, KTP partially funded by Innovate UK. Collaboration between Coventry University and Wolf Systems Ltd., Mar 2020 - Apr 2022. Partnership: KTP011892. Academic Supervisor/Principal Investigator.
- £250,000, KTP, partially funded by Innovate UK. Collaboration between Coventry University and GKN Aerospace Ltd., Jan 2019 - Feb 2022. Partnership: KTP011306. Lead Academic/Co-Principal Investigator.
- £50,000, Consultancy project funded by GKN Aerospace Ltd., 2013-2015. My contribution was £9600 from Nov-Jan 2016. This project aimed to predict the performance of future aircraft wing assembly facilities' performance and quantify key assets using simulation. The scenario analyses resulted in £2M savings by applying the ARENA Rockwell Software.
- £5500, the Sustainable Building Futures (SBF) Project. A CPD was delivered in a Logistics Simulation Workshop in February 2015.

MEDIA INTERVIEW

July 2015	Coventry University, UK Media: Marketing Dept of Coventry University URL: http://blogs.coventry.ac.uk/researchblog/interview-expert-ammar-al-bazi/
May 2015	NEC - Birmingham, UK Media: Voice Network URL: https://www.youtube.com/watch?v=nstmQLjrPEA

SELECTED PhD SUPERVISION

2020-2024	Developing Agent-Based Heuristics Model for Transporters Selection in Supply Chain Management Under COVID-19 Disruption. Industrial Partner: ALFORSAN CERAMIC Ltd. KSA
2018-2022	Agent-based Optimisation Approaches for Dynamic Vehicle Routing Problem under Random Breakdowns Industrial Partner: ARAMEX, Ltd. UAE
2018-2022	Artificial Intelligence for Safe and Efficient Self-driving Vehicles
2015-2019	Development of a Constrained Fuzzy Knowledge-Based Optimisation System for the Management of Container Yard Operations in the Logistics Industry. Industrial Partner: MARITIME Logistics Ltd., UK
2015-2019	Development of Agent-Based Heuristic Optimisation System for Complex OEM Flow-Shop under Customer-Imposed Production Disruptions. Industrial Partner: UNIPART EBERSPACHER EXHAUST SYSTEMS (UEES)
2016-2020	Integrated Supply Chain Planning and Scheduling in an Uncertain Environment
2015-2019	Management and Forecasting. Awarded by Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany Development and application of new reasoning mechanisms for rule-based fuzzy cognitive maps

SELECTED JOURNAL PUBLICATIONS

- 1) Yousif, S. T., Ismail, F. B., & Al-Bazi, A. (2024). **"A Hybrid Neural Network-Based Improved PSO Algorithm for Gas Turbine Emissions Prediction"**Advanced Theory and Simulations. Advanced online publication.
- 2) Madi F., Al-Bazi A., Buckley S., Smallbone J, Foster K. (2023). **"An agent-based heuristics optimisation model for production scheduling of make-to-stock connector plates manufacturing systems"**. Soft Computing (2023).
- 3) Shbool, M. A., Arabeyyat, O. S., Al-Bazi, D. A., Al-Hyari, A., Salem, A., Abu-Hmaid, T., & Ali, M. (2023). **"Machine Learning Approaches to Predict Patient's Length of Stay in Emergency Department"**. Applied Computational Intelligence and Soft Computing, 2023.
- 4) Ahmed, S., Al-Bazi, A., Saha, C., Rajbhandari, S., & Huda, M. N. (2023). **"Multi-scale pedestrian intent prediction using 3D joint information as spatio-temporal representation"**. Expert Systems with Applications, 225, [120077].
- 5) Al-Shahri O.A., Ismail F.B., Al-Muhsen N.F.O., Al-Bazi A., Hannan M.A. (2022). "An improved model and performance analysis for grid-connected photovoltaic system in Oman". Heliyon. 2022 Dec Vol. 8, Issue 12.
- 6) Saha C., Al-Bazi A. (2022). **"Application of Evolutionary Algorithms on Solar Photovoltaic System"**. Book Chapter. AIP Publisher.
- 7) Mohammed N.A., Al-Bazi A. (2021). **"An adaptive backpropagation algorithm for long-term electricity load forecasting"**. Neural Computing and Applications (2021).
- 8) Alnaimi F., Al Bazi A., Al-Hadeethi R.H.F. & Victor M. (2021). **"A Machine Learning Approach for Fire-Fighting Detection in the Power Industry"**. Jordan Journal of Mechanical and Industrial Engineering. Vol. 15, No. 5, pp: 475-482,
- 9) Mohammed N., Al-Bazi A. (2021). **"A Multi Agent-Based Optimisation Model for the Distribution Planning and Control of Energy-Based Intermittent Renewable Sources"**. International Journal of Energy Research, Accepted on 27-06-2-21.
- 10) Mohammed N., Al-Bazi A. (2021). **"Management of renewable energy production and distribution planning using agent-based modelling"**. Renewable Energy, 164(2021), pp. 509-520.
- 11) Obiora, V., Saha, C., Al Bazi, A. & Guha, K. (2021). **"Optimisation of Solar Photovoltaic (PV) Parameters Using Meta-Heuristics"**. Microsystem Technologies, 28-10-2020.
- 12) Tunde A.V., Al-Bazi A., Santos L.E. 2019. **"Agent-based modelling and heuristic approach for solving complex OEM flow-shop productions under customer disruptions"**. Journal of Computers & Industrial Engineering, Vol (133), pp. 29-41.

JOURNAL REVIEWING & EXTERNAL POSITIONS

- Reviewer for Journals of Applied Soft Computing, Journal of Computers and Industrial Engineering, International Journal of Production Research, Journal of Scheduling, International Journal of Fuzzy Systems, IMA Journal of Management Mathematics.
- Guest Editor, Supply Chain Analytics | Journal | ScienceDirect.com by Elsevier, March - July 2023.
- Editorial board member, Journal of Information and Communication Technology (JICT), University Utara Malaysia (Q1).