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I am a Senior Research Associate in Operational Research at the Department of Mathematics, University of Portsmouth. My research interests include optimisation, metaheuristics, and artificial intelligence (machine learning). My research involves the development and application of metaheuristic, heuristic, and machine learning algorithms for manufacturing, logistics, renewable energy, and autonomous vehicles.

The University of Birmingham granted me a PhD in 2021. I began working with the University of Portsmouth on the UKRI project DR-SUIT to create UAV-USV routing and scheduling for offshore windfarms. At the moment, I am involved in the European projects "Arctic Security and Emergency Preparedness Network" (ARC SAR) and "Artificial Intelligence Based Virtual Control Room for the Arctic" (AI-ARC), funded by The European Union's Horizon 2020 Framework Programme.

Research outputs

Bees traplining metaphors for the vehicle routing problem using a decomposition approach

Ismail, A. H. & Pham, D. T., 1 Jan 2023, *Intelligent Production and Manufacturing Optimisation—The Bees Algorithm Approach*. Pham, D. T. & Hartono, N. (eds.). Springer, p. 261-287 27 p. (Springer Series in Advanced Manufacturing).

Drones Swarm-Uncrewed Vessel routing and scheduling for offshore wind farm inspection

Ismail, A. H., Al-Behadili, M., Ouelhadj, D., Song, X. & Fraess-Ehrfeld, A., 23 Jun 2022. 1 p.

Combinatorial Bees Algorithm for vehicle routing problem

Ismail, A. H., Hartono, N., Zeybek, S., Caterino, M. & Jiang, K., 16 Apr 2021, In: *Macromolecular Symposia*. 396, 1, 4 p., 2000284.

Using the Bees Algorithm to solve combinatorial optimisation problems for TSPLIB

Ismail, A. H., Hartono, N., Zeybek, S. & Pham, D. T., 1 Apr 2020, In: *IOP Conference Series: Materials Science and Engineering*. 847, 9 p., 012027.

Domino algorithm: a novel constructive heuristics for traveling salesman problem

Ismail, A. H., 1 May 2019, In: *IOP Conference Series: Materials Science and Engineering*. 528, 9 p., 012043.

Projects

ARC-SAR: Arctic Security and Emergency Preparedness Network and Artificial Intelligence Based Virtual Control Room for the Arctic

Ismail, A.
1/09/22 → 29/02/24

Drone Swarm Routing and Scheduling

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1/02/22 → 31/08/22