

ARIS KARALIS

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Portsmouth, UK

As a Master's student in Artificial Intelligence with a strong foundation in software development, I am passionate about leveraging machine learning and data science to create innovative solutions. My expertise in Python, combined with a deep understanding of computing fundamentals and Agile methodologies, positions me well to contribute to a dynamic, cross-functional engineering team. I have experience in building and optimizing algorithms, designing testing frameworks, and working collaboratively to deliver high-quality, adaptive systems.

Skills

- Programming Languages: Python, Java, JavaScript, Haskell, HTML, CSS, FTL, XML, Flask, Bash Arduino
- Fuzzy Logic: Design and Implementation, Fuzzy Sets and Membership Functions
- Databases: PostgreSQL, Redis
- Tools: PyTorch, Kafka, TensorFlow, Docker, MATLAB, Simulink
- Interpersonal Communication: Attended seminars on effective listening and understanding, positive relationship building and productive meeting facilitation.
- Languages: Greek (mother tongue), English (proficiency level), German (B1 level)

Working Experience

August 2023 – Present, Senior Research Associate, University of Portsmouth



- Leading the development of an innovative risk index service within the European Horizon project “AI-ARC”.
- Developing complex algorithms based on **fuzzy logic** in a **MATLAB/Simulink environment**, integrating these systems into a shared virtual control room to improve international maritime safety and cooperation.
- Playing a pivotal role in the **creation and deployment of AI services** by constructing and maintaining robust data pipelines with **Kafka**, ensuring seamless data flow and system integration.
- Programming and scripting with **Python**, leveraging Agile methodologies to ensure rapid development cycles and high-quality outputs in a highly collaborative international research environment.
- Utilising **Git for version control** and collaborative software development, ensuring code integrity and facilitating team collaboration across various project segments.
- Holding meetings with stakeholders to collect project **requirements**.
- Producing comprehensive reports and scientific papers (*in preparation*) that contribute to the body of knowledge in AI applications for environmental and border security.
- Presenting developed services to a diverse range of stakeholders, including coastguards and insurance companies, effectively communicating complex technical concepts to non-technical audiences.
- Presenting at project demonstrations in Reykjavik, Iceland and Karlskrona, Sweden.
- Collaborating with international partners from multiple European countries, engaging in cross-cultural communication and team dynamics.

- Demonstrating excellent **organisational** and **time management skills**, performing effectively under pressure to meet project deadlines and milestones.
- Utilising Automatic Identification System (AIS) data to enhance situational awareness and maritime safety in the Arctic region.

August 2021 - July 2022, Student Java Developer, Stannah (Full-time Placement)

Stannah

- Worked effectively with cross-functional design teams to create software solutions that elevated client-side experience and significantly improved overall functionality and performance.
- Upheld program quality and delivery standards in developing software solutions.
- Developed new functionalities, both back-end (**Java**) and front-end (**JavaScript**).
- Collaborated with cross-functional development team members to analyse potential system solutions based on evolving client requirements.
- Maintained and debugged applications.

Secretary Assistant, Life-Lab English School, Greece, April 2019 – September 2019

- Welcomed new students and parents, providing a friendly and professional first impression of the school.
- Informed prospective students about the school's offerings and guided them through the enrolment process.
- Assisted with administrative tasks, such as maintaining records, scheduling appointments, and handling phone inquiries.
- Demonstrated strong organizational skills by managing multiple tasks and prioritizing responsibilities effectively.
- Developed excellent communication skills by interacting daily with students, parents, and staff from diverse backgrounds.

Education

Sept 2024 – August 2025

MSc Artificial Intelligence

University of Southampton



Sept 2019 – June 2023

University of Portsmouth

BSC (HONS) Computer Science

Overall Average 70% (1st)



Final Year Project: “*Mars Landing Simulation with Arduino*” focused on the development of an Arduino microcontroller, incorporating embedded systems and sensors; investigating real-time data processing with Python.

Research Project: “The tree structure depicted serves as the foundational framework for the comprehensive risk index, designed with modularity in mind to ensure seamless integration into various risk index calculations.”

Big Data Coursework: Developed and evaluated advanced machine learning models for masked face detection and movie recommendation, using WIDER FACE, MAFA, and TMDB 5000 datasets, emphasizing practical applications in diverse data environments.

Publications

Karalis, A., Willis, K., Ismail, A., Jones, D., Morris, D., Mattila, I., Svenson, P., & Labib, A. (2024). Risk Index Computation Service. Ocean Engineering - Under Review

Svenson, P., Holst, A., Wallberg, A., Nevalainen, P., Farahnakian, F., Alamo, A., Germinara, V., Schweizer, D., Emi, F., Leicht, M., Anneken, M., Hoppe, A. H., **Karalis, A.**, Labib, A., Eugenia, M., Liss Hernández, B., Partanen, P., & Markkanen, M. (2024). AI-ARC Baltic Demo: Detecting Illegal Activities at Sea. INTERNATIONAL CONFERENCE ON INFORMATION FUSION