Miguel Lourenço

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miguel lourenço

Professional Summary

Currently developing my Master's thesis while pursuing the final year of a Master's degree in Electrical and Computer Engineering at Instituto Superior Técnico, specializing in Telecommunications with a secondary focus on Networks and Communication Systems. I am highly curious and motivated, both academically and professionally, with strong leadership and time management skills developed through my experiences.

Skills

Tools:
- Git, GitHub, Visual Studio, Jupyter Notebook, Docker, Excel, LaTex
- Basic Knowledge: HTML, CSS

Programming Languages:
- C, Python, Matlab, Mathematica and R
- Basic Knowledge: SQL, Assembly

Technical Knowledge:
- Mathematics, Statistics and Physics
- Telecommunications, Networks, and Communication Systems
- Machine Learning and Reinforcement Learning

Experience

Federate Handball Athlete — *Almada, Portugal*
Almada Atlético Clube — *Sept 2022 – Present*
- Federated handball player, competing in the National Honor Division.

International Handball Athlete — *Portugal*
Federação Portuguesa de Andebol — *Sept 2021 – June 2022*
- Selected to represent the National Under-20 Handball Team.

Professional Handball Athlete — *Lisboa, Portugal*
Sporting Clube de Portugal — *Sept 2017 – June 2022*
- Federated handball player, where I developed my skills and competed at a professional level.
  - Winner of the Portuguese Cup 2021/2022;
  - National U18 Champion 2017/2018;
  - National U20 Champion 2018/2019.

Federate Handball Athlete — *Almada, Portugal*
Almada Atlético Clube — *Sept 2008 – June 2017*
- Federated handball player at Almada Atlético Clube, where I developed much of my skills and experience.

Projects

Anti-Jamming Techniques for UAVs based on Multi-Agent Reinforcement Learning — *Sept 2024 – Oct 2025*
Master's Thesis
- Thesis focused on optimizing the formation, network topology, and trajectory of a UAV swarm in the presence of jamming to enhance resilience and mission success. Involves the application of swarm intelligence techniques and optimization algorithms (e.g., Evolutionary Computing, Reinforcement Learning) to minimize jamming effects on communications in a Flying Mobile Network (FMN). Ongoing research at the Military Academy, with results to be published in an upcoming research paper.
- Tools: Python, Machine learning, Reinforcement Learning, Evolutionary Computing

Elderly Active elderlyactive.com *Jan 2024 - June 2024*

- Elderly Active, developed by a group of students from Instituto Superior Técnico, helps seniors stay active and independent through tailored exercises and interactive games. Using computer vision, machine learning, and image processing, it provides accurate health monitoring on a TV screen, promoting a healthier lifestyle and improving quality of life.
- Tools Used: Python, Machine learning, OpenCV, HTML
- Hardware: Raspberry Pi 5

Education

Instituto Superior Técnico, Lisboa *Sept 2023 – Oct 2025*
MSc in Eletrical and Computer Engineering

Instituto de Línguas da Universidade Nova de Lisboa, Lisboa *Feb 2025 – May 2025*
English B2 course

Instituto Superior Técnico, Lisboa *Sept 2020 – June 2023*
BSc in Eletrical and Computer Engineering

Languages

- **Portuguese** - Native
- **English** - Upper Intermediate / Advanced (B2/C1)
- **Spanish** - Intermediate (B1/B2)