



## KEYWORDS

### Areas of Expertise:

Data Science  
Network Science  
Computational Social Science  
Urban Dynamics  
Virtual Robotics  
Gamification  
Programming Learning

Last [Google Scholar](#) alt-metrics:  
h-index: 9; 192 citations

### Development:

Python, JAVA, C & C++  
SQL, NoSQL(MongoDB)  
HTML & CSS JavaScript  
UML & SysML, BPMN, ArchiMate  
CAD,  $\LaTeX$ , Assembly (MIPS, 8086)  
Git, SDN, STP, ICMP, ARP, DNS

## COURSEWORK

### GRADUATE

Data Science  
Natural Language  
Autonomous Agents & Multi-Agent Sys.  
Planning, Learning & Int. Decision-Making  
Machine Learning  
Network Science  
Information Systems Management  
Information Visualization  
3d Programming

### UNDERGRADUATE

Software Engineering I & II  
Information Processing  
Algorithms & Data Structures  
Parallel & Distributed Programming  
Object Oriented Programming  
Signal Theory  
Network Programming  
Digital Networks I, II & III  
Management & Enterprise Accounting

## RESEARCH INTEREST

I am interested in studying the applications of machine learning, game theory, and network science in the context of mobility, security, and sustainability.

## EXPERIENCE

### INESC-ID & LNEC | RESEARCH FELLOWSHIP

Sep. 2020 - Present | Lisbon, Portugal

- Researching on multimodal urban data analysis for improving public transportation in face of the demand change. (**ILU project**)
- Researching in the context of the **ADMIRAL project**

### INSTITUTO SUPERIOR TÉCNICO, UNIVERSITY OF LISBON | TEACHING ASSISTANT

Feb. 2020 - Present | Lisbon, Portugal

- Spring 2023 Artificial Intelligence;
- Fall 2022: Machine Learning; Fundamentals of Programming;
- Spring 2020 - 2022: Data Administration in Information Systems;
- Spring 2022: Systems Analysis and Modeling;
- Spring 2022: Data Bases;
- Fall 2021: Network Science; Systems Analysis and Modeling;
- Fall 2020: Information Processing and retrieval.

### INSTITUTO DE TELECOMUNICAÇÕES | UNDERGRADUATE RESEARCH ASSISTANT

Nov. 2018 - Apr. 2019 | Lisbon, Portugal

- Worked on web scrapping and text extraction algorithms.

## EDUCATION

### PHD. IN COMPUTER SCIENCE

INSTITUTO SUPERIOR TÉCNICO, UNIVERSITY OF LISBON

Ongoing | Lisbon, Portugal

Advisor: Professor Rui Henriques, PhD and Professor Francisco C. Santos PhD and Elisabet Arsénio PhD; Working on Network Science and Machine Learning development. **GPA: 19/20;**

### MSC. IN INFORMATION SYS. AND COMPUTER ENGINEERING

INSTITUTO SUPERIOR TÉCNICO, UNIVERSITY OF LISBON

Nov. 2021 | Lisbon, Portugal

Advisor: Professor Rui Henriques, PhD and Dr. Elisabete Arsenio, PhD; Dissertation: Modeling and assessing resilience in multimodal transport systems; Focus on data and network science.

**Overall GPA: 18/20; Dissertation Grade: 19/20**

### BSC. IN COMPUTER ENGINEERING

SCHOOL OF TECHNOLOGY AND ARCHITECTURE AT INSTITUTO  
UNIVERSITARIO DE LISBOA (ISCTE-IUL)

Jul. 2019 | Lisbon, Portugal

Was students delegate for Computer Engineering degree;

**GPA: 17/20.**

## EDUCATION CONT.

### DEEP LEARNING FOR AI AND COMPUTER VISION

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

Aug. 2019 | Cambridge, MA

Was awarded a scholarship. Summer course to expand knowledge and discuss perspectives with computer vision researchers. Developed expertise in CV tasks such as object recognition, scene recognition and human motion categorization. Lectured by Professors Antonio Torralba and Phillip Isola

### DESIGNING EFFICIENT DEEP LEARNING SYSTEMS

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

Jul. 2018 | Cambridge, MA

Summer course focused on understanding the high and low level considerations, hardware and softwares wise when implementing a DL systems and how to optimize them. Lectured by Professor Vivienne Sze

### EPIGENETICS: FOUNDATIONS AND HUMAN HEALTH

INSTITUTO SUPERIOR TÉCNICO UNIVERSITY OF LISBON

Nov. 2020 and Mar. 2021 | Online

### INTRODUCTION TO BUSINESS MANAGEMENT

KING'S COLLEGE LONDON

Mar. 2022 | Online

### STATISTICAL DATA ANALYSIS FOR GENOME SCALE BIOLOGY

EMBL

Jun. 2022 | Brixen, Italy

### INTERNATIONAL SCHOOL ON MODERN PHYSICS AND RESEARCH "THE QUANTUM LEGACY"

NATIONAL LABORATORY OF FRASCATI (LNF) OF THE ISTITUTO NAZIONALE DI FISICA NUCLEARE (INFN)

Feb. 2016 | Frascati (Rome), Italy

Lectures on Modern Physics and its applications in Society.

More at: <http://edu.lnf.infn.it/inspyre-2016/>

### YA-FIRST STEP, ENTREPRENEURSHIP PROGRAM

ISCTE-IUL BUSINESS SCHOOL

Jul. 2012 | Lisbon, Portugal

Learned basic concepts of finance, marketing and Investment analysis. Presented an implementation of a bike sharing service in Lisbon.

### OTHER EDUCATION

Introduction to Python with Artificial Intelligence Applications at NOVA UNIVERSITY, INFORMATION MANAGEMENT SCHOOL (NOVA IMS) JUL. 2017 | LISBON, PORTUGAL | GPA: 20/20

Internship in design and rapid prototyping of components using 3d drawing tools at INSTITUTO SUPERIOR TECNICO, UNIVERSITY OF LISBON | JUL. 2016 | LISBON, PORTUGAL

Radio School at UNIVERSITY OF MINHO | JUL. 2012 | BRAGA, PORTUGAL

## AWARDS

2021	School	IST Diploma of Academic Merit
2020	National	EDP TOP 3 - Local   EDP University Challenge Portugal 2020
2020	School	ISCTE Academic Merit Diploma
2019	School	ISTA TOP Talent Award (Academic merit award) 2018-2019
2018	School	ISTA TOP Talent Award (Academic merit award) 2017-2018
2017	School	ISTA TOP Talent Award (Academic merit award) 2016-2017
2017	School	ISCTE-IUL Research Week Finalist
2016	National	4 <sup>th</sup> Place, National Robotics Competition: Robocup Rescue Maze (Portugal)
2014	Scholarship	2 <sup>nd</sup> Place, FCUL Rally Pro (Programming Competition)
2014	National	3 <sup>rd</sup> Place, National Robotics Competition: Robocup Rescue (Portugal)
2013	National	3 <sup>rd</sup> Place, National Robotics Competition: Robocup Rescue (Portugal)
2012	International	Best Presentation Award: Worldwide Robotics Competition: Robocup Junior
2012	National	3 <sup>rd</sup> Place, National Robotics Competition: Robocup Rescue (Portugal)

# PUBLICATIONS

## JOURNAL

1. Aparicio, J. T., Arsenio, E., Santos, F. C., & Henriques, R. (2023). Spatiotemporal trip profiles in public transportation reveal city modular structure. **Transportation Research Interdisciplinary Perspectives**, 19. (Impact Factor: 9.75, Q1)
2. Aparicio, J. T., Arsenio, E., Santos, F. C., & Henriques, R. (2022). LINES: muLtiModal traNsportation rEsilience analysis, **Sustainability** 14(13), 7891. (Impact Factor: 3.889, Q1)
3. Aparicio, J. T., Arsenio, E., & Henriques, R. (2022). Assessing Robustness in Multimodal Transportation Systems: A case study in Lisbon. In **European Transport Research Review** 2022. (Impact Factor: 2.415, Q1)
4. Aparicio, J. T., Arsenio, E., & Henriques, R. (2021). Understanding the Impacts of the COVID-19 Pandemic on Public Transportation Travel Patterns in the City of Lisbon. **Sustainability**, 13(15), 8342. (Impact Factor: 3.889, Q1)

## CONFERENCE

1. Aparicio, J. T., Karatsolis, A. & Costa, C. J. (2023). Network visualization techniques for story charting The case of a book in Portuguese. WAIM 2023 - 5th Workshop on Artificial Intelligence and Management. 2023 18th Iberian Conference on Information Systems and Technologies (CISTI), 16. **IEEE**, in press
2. Aparicio, J. T., Timenko, V. & Costa, C. J. (2023). Explaining Wikipedia page similarity using network science. In Lecture Notes in Networks and Systems. **Springer**, in press
3. Aparicio, J. T., Tiam-Lee, T. J. & Costa, C. J. (2023). Polarization and similarity of news in Portugal and the Philippines. In Lecture Notes in Networks and Systems. **Springer**, in press
4. Aparicio S., Aparicio, J. T., & Aparicio, M. (2023). Multidimensional and Multilingual Emotional analysis. In Lecture Notes in Networks and Systems. **Springer**, in press
5. Aparicio, J. T., Aparicio, M., & Costa, C. J. (2022). Design Science in Information Systems and Computing. In Lecture Notes in Networks and Systems. **Springer**, in press
6. Aparicio, J. T., Arsenio, E., & Henriques, R. (2022). Advances in the spatiotemporal profiling of public transport users in the city of Lisbon. In **Transportation Research Procedia**, 2022. **Elsevier**
7. Aparicio, J. T., Romão, M & Costa, C. J. (2022). Predicting Bitcoin prices . WAIM 2022 - 4th Workshop on Artificial Intelligence and Management. 2022 17th Iberian Conference on Information Systems and Technologies (CISTI), 16. **IEEE**
8. Aparicio, J. T., Arsenio, E., & Henriques, R. (2021). Assessing Robustness in Multimodal Transportation Systems: A case study in Lisbon. In **European Transport Conference** 2021. (Rank B)
9. Costa, C., Aparicio, M., & Aparicio, J. (2021, October). Sentiment Analysis of Portuguese Political Parties Communication. In **The 39th ACM International Conference on Design of Communication** (pp. 63-69). (Rank B1)
10. Aparicio, J. T., Trinca, M., Castro, D., Henriques, R. (2021). Vehicle Smart Grid Allocation using Multi-Agent Systems sensitive to Irrational Behavior and Unstable Power Supply. WAIM 2021 - 3rd Workshop on Artificial Intelligence and Management. 2021 16th Iberian Conference on Information Systems and Technologies (CISTI), 16. **IEEE**
11. Aparicio, J. T., Sequeira, J. S., Carlos, C. J. (2021). Emotion analysis of Portuguese Political Parties Communication over the covid-19 Pandemic. WAIM 2021 - 3rd Workshop on Artificial Intelligence and Management. 2021 16th Iberian Conference on Information Systems and Technologies (CISTI), 16. **IEEE**
12. Costa, C. J., & Aparicio, J. T. (2021). A Methodology to Boost Data Science in the Context of COVID-19. In **Advances in Parallel & Distributed Processing, and Applications** (pp. 65-75). **Springer**.
13. Costa, C. J. & Aparicio, J. T. (2020). POST-DS: A methodology to boost data science. WAIM 2020 - 2nd Workshop on Artificial Intelligence and Management. 2020 15th Iberian Conference on Information Systems and Technologies (CISTI), 16. **IEEE**
14. Aparicio, Joao Tiago, Pereira, S., Aparicio, M., & Costa, C. J. (2019). Learning Programming Using Educational Robotics. 2019 14th Iberian Conference on Information Systems and Technologies (CISTI), 16. **IEEE**
15. Aparicio, S., Aparicio, J. T., & Costa, C. J. (2019). Data Science and AI: Trends Analysis. 2019 14th Iberian Conference on Information Systems and Technologies (CISTI), 16. **IEEE**
16. Aparicio, Joao Tiago, Aparicio, M., & Costa, C. J. (2018). A Virtual Robot to support Programming Learning. **ISR 2018 - 50th International Symposium on Robotics**, 139142. **IEEE** (Rank A)

17. Aparicio, Joao Tiago, & Costa, C. J. (2018). A virtual robot solution to support programming learning an open source approach. 2018 13th Iberian Conference on Information Systems and Technologies (CISTI), 16. **IEEE**
18. Costa, C. J., Aparicio, M., Aparicio, S., & Aparicio, J. T. (2017). Gamification usage ecology. Proceedings of the 35th ACM International Conference on the Design of Communication, 19. **ACM** (Rank B1)
19. Pereira, R., Costa, C. J., & Aparicio, J. T. (2017). Gamification to support programming learning. 2017 12th Iberian Conference on Information Systems and Technologies (CISTI), 16. **IEEE**

## TALKS

1. 2023 Paper presentation at INESC ESR Talks: Advances in User Journey profiles in Lisbon
2. 2022 Invited Paper presentation at Outsystems AI Research: Assessing resilience in Multimodal Transportation Systems
3. 2020 - Master Lecture: Creativity in Robotics: Lecture for a master students in the context of computational creativity @ ISCTE-IUL ISTA
4. 2019 - Master Lecture: Open Source Robotics as booster to Creativity: Showcased practical applications of Robotics as a mean to encourage the making of original projects @ ISCTE-IUL ISTA
5. 2018 - Master Lecture: Computing Creativity & Robotics: Introduced robotics in the context of a Creative Computing class, with several examples of Open Source hardware solutions @ ISCTE-IUL ISTA
6. 2017 - Master Lecture: Logistics & Robotics: Introduced robotics in the context of logistics to the Information Systems and ERP course students at the ISCTE Business School @ ISCTE-IUL IBS
7. 2017 - Introduction to Robotics using Arduino: Workshop about the use of Arduino, illustrating computer programming concepts @ School of Technology at IPS
8. 2017 - SmartTalk: Robotics: Presented some elements of robotics in context of education and demonstration of a prototype for a firefighting robot competition. @ ISLA Santarem

## VOLUNTEERING

### **ACM EUROSIGDOC | WEBMASTER**

Sep. 2022 - Present | Europe

### **ACM STUDENT CHAPTER AT ISCTE-IUL | BOARD MEMBER**

Feb. 2019 - Nov. 2022 | Lisbon, Portugal

### **ACM STUDENT CHAPTER AT ISCTE-IUL | CHAIR**

Dec. 2016 - Feb. 2019 | Lisbon, Portugal

- Organized events and open lectures, managed teams and participated in coding competitions.

### **IEEE STUDENT BRANCH ISCTE-IUL | CHAIR OF THE ROBOTICS AND AUTOMATION SOCIETY**

Oct. 2016 - Jul. 2019 | Lisbon, Portugal

- Built robots for 2 competitions and managed 2 teams.

## **MENTOR**

### **CODERDOJO-LX**

Apr. 2015 - Oct. 2017 | Lisbon, Portugal

Taught the fundamentals of programming and electronics for project-based learning to children between 6 and 17 years old.

## MEMBERSHIP IN PROFESSIONAL SOCIETIES

- Association for Computing Machinery (**ACM**) since 2016
- Institute of Electrical and Electronics Engineers (**IEEE**) since 2016