



# Samuel Gomes

Ph.D. Candidate – Computer Science and Engineering

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During my student years, I received my education degrees in Computer Science (CS) and Engineering from Técnico Lisboa, focusing on the fields of Artificial Intelligence (AI) and Games. As a researcher, I continue to study CS areas such as adaptation, computer-driven interaction, serious game technologies, and affective computing, along with other fields such as education sciences and psychology.

## Experience

### Researcher and Developer – FMH

(2025 – Now)



I worked as a researcher and developer in the project the Horizon Europe project: [iPROLEPSIS: Psoriatic Arthritis Inflammation explained through multi-source Data Analysis guiding a novel Personalised Digital Care Ecosystem](#), with Grant agreement ID 101095697 (February 2025 – Now).

This role leveraged me to develop my research skills, and complemented my doctoral studies with know-how in games and digital healthcare.

### Researcher and Developer – INESC-ID

(2017 – Now)



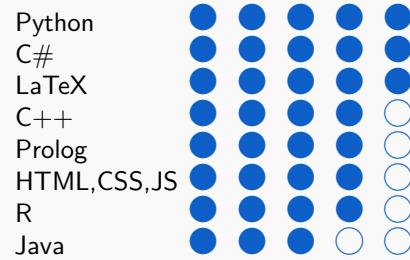
I worked as a researcher and developer in several projects:

- My Ph.D. project [GIMME](#), that remains active since January of 2020 (granted by Fundação para a Ciência e a Tecnologia with Ref. SFRH/BD/143460/2019 from January of 2020 to March of 2024);
- The [AMIGOS](#) project (May of 2018 – December of 2019) with Ref. PTDC/EEISII/7174/2014;
- The European Union's Horizon 2020 [LAW-TRAIN](#) project, with Ref. 2020-FCT-2014/ 653587 (October of 2017 – April of 2018).

This role leveraged me to develop my research skills, and complemented my doctoral studies with know-how in games, robotics, affective computing, psychology, and education sciences.

## Technical Skills

### Programming Languages



### Libraries and Frameworks

- Django  
d3.js, node.js, express.js  
CUDA, AWS API  
MLAgents for Unity

### Tools

- Unity, Godot  
Git (GitKraken, SourceTree)  
SPSS  
Mongo db, SQLite, MySQL  
Kate, JetBrains (IntelliJ IDEA, CLion, Rider), Visual Studio  
Blender 3D, Inkscape, Krita  
Audacity

### Operational Systems

- Linux, Windows

## Idioms

- Portuguese – Native  
English – Fluent

## **Teaching Assistant – Técnico Lisboa**



(2020 – Now)

I worked as a Teaching Assistant (TA) in multiple CS and Engineering courses:

- Game Design (M.Sc.) during the academic years [2022/2023](#), [2023/2024](#), and [2024/2025](#);
- Game Development Methodology (M.Sc.) during the academic years [2022/2023](#) and [2023/2024](#);
- Logic for Programming (B.Sc.) during the academic years [2019/2020](#), [2020/2021](#), [2021/2022](#), [2022/2023](#), [2023/2024](#), and [2024/2025](#);
- Three-Dimensional Visualization and Animation (M.Sc.) during the academic years [2020/2021](#) and [2021/2022](#).

With this role, I developed teaching and coaching skills, while also improving my technical know-how in the areas connected to games, logic programming, and computer graphics (*protégé* effect). I was awarded multiple Teaching Excellence Diplomas issued by Técnico Lisboa, as mentioned further on.

## **Developer and Graphical/Audio Designer – Coding Competitions**

(2017 – 2021)

I participated in multiple coding competitions, ranging from game jams to a hackaton. In specific, I participated in:

- Global Game Jam during the years [2018](#), [2019](#), [2020](#), and [2021](#);
- Google HashCode during the years [2018](#), [2019](#), and [2021](#);
- Gulbenkian Hack for Good 2017.

These events helped me develop my coding and game development skills (coding and designing graphical and audio game elements) as well as my soft skills and peer-relatedness. I made new friends along the way as I worked in several Global Game Jam editions with people I didn't know before.

## **Education and Training**

### **Ph.D. in CS and Engineering – Técnico Lisboa**



(2018 – 2025)

Through my Ph.D. at Técnico Lisboa, I studied areas such as adaptation, computer-driven human-human interaction, serious game technologies, and affective computing. My Ph.D. thesis, supervised by professors [Carlos Martinho](#) and [João Dias](#), focuses on the design and development of games and AI processes driven by individuals' preferences for certain styles of interaction, such as competition or collaboration. This work originated multiple [publications in international conferences](#).

Since the start of my doctoral studies, I improved my research and data treatment skills, and acquired knowledge not only in CS, but also in other fields such as education sciences and psychology. I also had the opportunity to improve my technical skills on tools, frameworks, and programming languages that I had not considered as extensively before (e.g., Django for Python, R).

### **Commercialization and Entrepreneurship Program – HiSeedTech**



(2025)

I have participated in the 2025 edition of HiTech, a cohort-based training program focused on developing skills in technology commercialization and entrepreneurship, held from 18 February to 26 June 2025.

### **B.Sc. in CS and Engineering, M.Sc. in Games and Data Analysis – Técnico Lisboa**



(2012 – 2017)

Throughout these degrees, I developed not only technical skills but also other practical know-hows, such as time management skills and soft skills targeted at group-based development. More importantly, from an academic perspective, I developed self-determination, given that I related with multiple peers, learned how to study autonomously, and improved my competencies.

I was awarded Merit Diplomas associated with the B.Sc. and M.Sc. degrees, and an Excellence Diploma associated with the M.Sc. degree, both issued by Técnico Lisboa.

My M.Sc. thesis, supervised by professors [João Dias](#) and [Carlos Martinho](#), focused on creating and testing a GPU-enhanced variant of the Rapidly-exploring Random Tree search algorithm. This work led to a [publication in the EPIA AI conference](#).

## Research Publications

(2017 – 2025)

### Conference

**Samuel Gomes**, Luis Costa, Marta Couto, Sandra Gama, Carlos Martinho, Joao Dias, Geraldo Xexéo, and Ana Moura Santos. "Exploring Compatible Interaction Preferences with a Puzzle Video Game", 2025, in Conference Proceedings of DiGRA 2025: Games at the Crossroads. [[PDF](#)]

Francisco Rosa, **Samuel Gomes**, and Carlos Martinho. "Exploring the Impact of Player Personality on Cooperative Game Reward Sharing", 2024, in: 2024 IEEE Conference on Games (CoG). [[PDF](#)]

**Samuel Gomes**, Tomás Alves, João Dias, and Carlos Martinho, "Reward-Mediated Individual and Altruistic Behavior", 2022, in: Videogame Sciences and Arts. VJ 2020. [[PDF](#)]

Tomás Alves, **Samuel Gomes**, João Dias, and Carlos Martinho, "The Influence of Reward on the Social Valence of Interactions", 2020, in: IEEE Conference on Games (CoG) 2020. [[PDF](#)]

Filipa Correia, **Samuel Gomes**, Samuel Mascarenhas, Francisco S. Melo, and Ana Paiva, "The Dark Side of Embodiment Teaming Up With Robots VS Disembodied Agents", 2020, in Robotics: Science and Systems. [[PDF](#)]

Fernando P. Santos, Samuel Mascarenhas, Francisco C. Santos, Filipa Correia, **Samuel Gomes**, and Ana Paiva, "Picky losers and carefree winners prevail in collective risk dilemmas with partner selection", 2020, in: Auton. Agent Multi-Agent Syst. 34, 40. [[PDF](#)]

**Samuel Gomes**, João Dias, and Carlos Martinho, "Group Interactions Manager for Multiplayer sErious games", 2019, in: IEEE Conference on Games (CoG) 2019. [[PDF](#)]

Filipa Correia, Samuel Mascarenhas, **Samuel Gomes**, Patrícia Arriaga, Iolanda Leite, Rui Prada, Francisco S. Melo, and Ana Paiva, "Exploring Prosociality in Human-Robot Teams", 2019, in: 14th ACM/IEEE International Conference on Human-Robot Interaction (HRI'19). [[PDF](#)]

Fernando P. Santos, Samuel Mascarenhas, Francisco C. Santos, Filipa Correia, **Samuel Gomes**, and Ana Paiva, "Outcome-based Partner Selection in Collective Risk Dilemmas", 2019, in: Proceedings of the 18th International Conference on Autonomous Agents and MultiAgent Systems. [[PDF](#)]

**Samuel Gomes**, João Dias, and Carlos Martinho, "Iterative Parallel Sampling RRT for Racing Car Simulation", in: Progress in Artificial Intelligence. EPIA 2017, Lecture Notes in Computer Science, vol 10423. Springer, Cham. [[PDF](#)]

### Journal

Luis Felipe Coimbra Costa, **Samuel Gomes**, Ana Moura Santos, Geraldo Bonorino Xexéo, Yuri Oliveira De Lima, Rui Prada, Carlos Martinho, and João Dias, "Heroine's Learning Journey: Motivating Women in STEM Online Courses Through the Power of a Narrative", in IEEE Access, vol. 12, pp. 20103-20124, 2024, doi: 10.1109/ACCESS.2024.3360376. [[PDF](#)]

**Samuel Gomes**, José Bernardo Rocha, João Dias and Carlos Martinho, "Designing a Mood-Mediated Multi-Level Reasoner", in IEEE Transactions on Affective Computing, doi: 10.1109/TAFFC.2023.3293310. [[PDF](#)]

**Samuel Gomes**, Luis Costa, Carlos Martinho, João Dias, Geraldo Xexéo, and Ana Moura Santos, "Modeling students' behavioral engagement through different in-class behavior styles", 2023, in: International Journal of STEM Education, 10.1: 21. [[PDF](#)]

Patrícia Alves-Oliveira, **Samuel Gomes**, Ankita Chandak, Patrícia Arriaga, Guy Hoffman, and Ana Paiva, "Software architecture for YOLO, a creativity-stimulating robot", 2020, in: SoftwareX, 11, 100461. [[PDF](#)]

### Demo

**Samuel Gomes**, Luis Costa, Carlos Martinho and João Dias, "The Alien Bar Game: Puzzling Social Interaction Between Baristas", 2024, in: Special Issue for GALA 2024 Games Competition & Exhibition Book of Abstracts. [[PDF](#)]

**Samuel Gomes**, Tomás Alves, João Dias, and Carlos Martinho, "Message Across: A word matching game for reward-based in-game behavior change", 2022, in: Videogame Sciences and Arts. VJ 2020. [[PDF](#)]

Filipa Correia, Samuel Mascarenhas, **Samuel Gomes**, Silvia Tulli, Fernando P. Santos, Fernando C. Santos, Rui Prada, Francisco S. Melo, and Ana Paiva, "For The Record - A Public Goods Game For Exploring Human-Robot Collaboration", 2019, in: Proceedings of the 18th International Conference on Autonomous Agents and MultiAgent Systems. [[PDF](#)]

### Presentation

**Samuel Gomes**, and Luis Costa. "Behavioral Analysis of Math Students' Engagement.", 2022, Presented at: Encontro Nacional da Sociedade Portuguesa de Matemática 2022 (ENSPM 2022). [[PDF](#)]

## Workshop

Silvia Tulli, Filipa Correia, Samuel Mascarenhas, **Samuel Gomes**, Francisco S. Melo, Ana Paiva (2019). Effects of Agents' Transparency on Teamwork. In: Calvaresi, D., Najjar, A., Schumacher, M., Främling, K. (eds) Explainable, Transparent Autonomous Agents and Multi-Agent Systems. EXTRAAMAS 2019. Lecture Notes in Computer Science, vol 11763. Springer, Cham. [[PDF](#)]

## Master's Thesis

**Samuel Gomes**, João Dias, and Carlos Martinho, "Application and Design of GPU Parallel RRT for Racing Car Simulation. Case Study of Iterative Parallel Sampling RRT applied to The Open Racing Car Simulator", M.Sc. Thesis, 2017, Instituto Superior Técnico. [[PDF](#)]

## Supervision

(2020 – 2024)

I helped in the supervision of:

- The Técnico Lisboa M.Sc. thesis entitled "[Study of The Role of Personality in Remote Teamwork in Virtual Environments](#)" by [Paulina Wykowska](#) (September 2022 – June 2024);
- The Técnico Lisboa M.Sc. thesis entitled "[Synergistic Companions for Games](#)" by [Pedro José Moreira Bento](#) (September 2022 – November 2023);
- The Técnico Lisboa M.Sc. thesis entitled "[Team Formation in Gamified Environments](#)" by [Pedro Alexandre Gonçalves Vilela](#) (September 2021 – November 2022);
- The Técnico Lisboa M.Sc. thesis entitled "[Personality-Based Reward Sharing In Cooperative Games](#)" by [Francisco José da Silva Rosa](#) (September 2020 – December 2021).

## Awards

(2015 – 2022)

I earned several awards:

- A Ph.D. grant with Ref. SFRH/BD/143460/2019, issued by Fundação para a Ciência e a Tecnologia;
- Teaching Excellence Diplomas associated to the years 2019/2020 and 2021/2022, issued by Técnico Lisboa;
- An Honorable Mention for the valuable contribution of "Reward-Mediated Individual and Altruistic Behavior," issued by Videogame Sciences and Arts. VJ 2020;
- An Excellence Diploma associated to the M.Sc. degree issued by Técnico Lisboa;
- Merit Diplomas associated to the B.Sc. and M.Sc. degrees, both issued by Técnico Lisboa.

## Professional Service

Lab Manager – GAIPS lab



(2024)

As a member of the GAIPS Lab Management team (May 2024 – August 2024), I helped with the organization of the lab resources and the technical maintenance of its automated systems.

This role improved my technical and management know-how.

Member of the Social Work Group – Técnico PhD Hub



(2022 – 2024)

As a member and co-coordinator of the social networking work group of the Técnico PhD Hub, previously named PhD Student Club (April 2022 – April 2024), I helped with the organization of social gathering events.

This role improved my peer interaction skills and relatedness, and it helped me expand my professional network.

## **Conference Organization**

(2019 – 2024)

I was a publication chair for IVA 2022, and did volunteer work for IVA 2022 and EPIA 2022. I did review work for CoG 2024, CoG 2022, CoG 2020, AIIDE-20, VJ2019, and ICGI2019.

With these roles, I developed critical skills and improved my own research skills and knowledge (*protégé effect*).

## **Supervisor and Instructor – TreeTree2**

(2019 – 2021)



In the [AfterSchool project by TreeTree2](#) (March 2021 – April 2021), I worked as an instructor, teaching the basics of programming to middle school students using Python.

In the [HAC project by TreeTree2](#) (September 2019 – June 2020), I supervised and mentored a middle school student, helping him to conceptualize and develop a computer science project of his liking. In this scope, the student developed a snake-style game using the [pygame Python library](#).

Similar to the TA work, these roles helped me to improve my coaching skills, and more importantly, they taught me how to adapt instruction and mentoring to younger students.