

Juan Carlos Alonso Valenzuela

PhD in Computer Science | Researcher at University of Seville

Researcher on AI-driven software engineering with a PhD in Computer Science, focused on automated testing of REST APIs. I build AI-driven tools that solve real-world problems, with award-winning research uncovering 40+ bugs in commercial platforms like GitHub and YouTube. My expertise spans software testing, NLP, and generative AI, including work on LLM-based test oracle generation and fine-tuning open-source models. I seek industry roles where I can apply my skills to build impactful tools at the intersection of AI and software engineering.

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 juaaloval

WORK EXPERIENCE

Researcher

University of Seville Jan 2024 - Today

Researcher at the SCORE Unit of Excellence, focusing on AI-driven techniques for automated testing of APIs. Designed and evaluated methods for LLM-based test oracle generation to uncover real-world bugs, combining software testing, NLP, and practical AI solutions.

Professor

University of Seville Oct 2021 - Jan 2024

Taught 600 hours over three academic years alongside postgraduate studies, covering technical topics such as Docker, Linux, web scraping, web development (Django, Spring Boot), software testing, architecture, and systems integration.

IT Technician

University of Seville Oct 2020 - Oct 2021

Applied NLP and semantic web technologies to automate REST API testing, leading to a peer-reviewed journal publication.

SKILLS

- **Languages:** Python, Java, JavaScript, R.
- **ML & Data:** TensorFlow, TensorBoard, Keras, pandas, scikit-learn, nltk, NumPy, Matplotlib, Plotly.
- **Generative AI & NLP:** HF Transformers, LangGraph, LangChain.
- **DevOps & Tools:** Git, Docker.
- **Web Development:** Node.js, Angular, React, Spring Boot, Django.

AWARDS

- **Distinguished Artifact Award at ISSTA 2023:** Recognized for high-quality, reproducible, and practical supplemental material with strong potential for advancing future research and practice.
- **Second Prize, ACM SRC Grand Finals 2023:** International competition involving over 250 PhD students from 19 conferences.
- **Best scientific publication of January 2023 at the School of Informatics of the University of Seville.**
- **First Prize, ACM SRC Graduate Category at ESEC/FSE 2022 (Singapore).**
- **Extraordinary master's degree Award (Best record of my year).**
- **Best Bachelor Thesis of my promotion.**

EDUCATION

PhD in Computer Science

University of Seville Sep 2022 - Jul 2025

- With honors (cum laude).
- International mention.
- Two research stays at University of Washington (USA) and Università della Svizzera Italiana (Switzerland).
- Research on automated testing of REST APIs, combining software engineering, machine learning, and NLP to create tools that uncovered over 40 real bugs in widely used platforms.

MSc in Software Engineering Data Science Track

University of Seville Sep 2021 - Jun 2022

- Grade: 9.59/10
- Best record of my year.
- Subjects with distinction 5 (including thesis).

BSc in Software Engineering

University of Seville Sep 2016 - Feb 2021

- Completed the final year at the University of Mannheim (Germany), taking MSc courses in Data Science, NLP and AI.

SELECTED PUBLICATIONS

- **SATORI: Static Test Oracle Generation for REST APIs. ASE 2025.**
 - First LLM-based static oracle generator for REST APIs.
 - Identified 18 bugs in 7 industrial APIs.
- **Test Oracle Generation for REST APIs. TOSEM 2025.** Detected over 30 real bugs in 11 industrial APIs.
 - Detected 30+ real bugs across 11 industrial APIs.
- **AGORA: Automated Generation of Test Oracles for REST APIs. ISSTA 2023.**
 - First test oracle generation approach for REST APIs.
 - Distinguished Artifact Award.
- **ARTE: Automated Generation of Realistic Test Inputs for Web APIs. TSE 2022.**

Languages

Spanish (Native) — English (C2-University of Cambridge) — Japanese (B1-University of Seville)