

# JUAN CARLOS ALONSO VALENZUELA

Postdoctoral Researcher

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## PROFILE

26-year-old PhD in Computer Science, with a master's degree in software engineering (CLOUD, Data, and IT Management) and a bachelor's degree in software engineering. My current research interests focus on automated software engineering, software testing, natural language processing (with emphasis on LLMs), and artificial intelligence.

## RESEARCH EXPERIENCE

### POSITIONS

- **Postdoctoral researcher** ..... 2025 -  
SCORE Unit of Excellence, University of Seville
- **Predoctoral researcher** ..... 2022 - 2025  
Applied Software Engineering (ISA) research group – Seville (Spain)
- **Teaching assistant** ..... 2021 - 2024  
University of Seville (Spain)
- **Research assistant** ..... 2020 - 2021  
Applied Software Engineering (ISA) research group – Seville (Spain)

### PUBLICATIONS

#### Journals

- Juan C. Alonso, Michael D. Ernst, Sergio Segura, Antonio Ruiz-Cortés. **Test Oracle Generation for REST APIs**. *ACM Transactions on Software Engineering and Methodology*. 2025.
- Juan C. Alonso, Alberto Martin-Lopez, Sergio Segura, José María García, Antonio Ruiz-Cortés. **ARTE: Automated Generation of Realistic Test Inputs for Web APIs**. *IEEE Transactions on Software Engineering*. 2022.

#### Conferences and workshops

- Juan C. Alonso, Alberto Martin-Lopez, Sergio Segura, Gabriele Bavota, Antonio Ruiz-Cortés. **SATORI: Static Test Oracle Generation for REST APIs**. *40th IEEE/ACM International Conference on Automated Software Engineering (ASE 2025)*. Seoul, South Korea. 2025.
- Miguel Romero-Arjona, José Antonio Parejo, Juan C. Alonso, Ana Belén Sánchez, Aitor Arrieta. **AI-Driven Fairness Testing of Large Language Models: A Preliminary Study**. *1st International Workshop on Fairness in Software Systems*. Montréal, Québec, Canada. 2025.
- F. J. Cavero, Juan C. Alonso, Antonio Ruiz-Cortés. **From Static to Intelligent: Evolving SaaS Pricing with LLMs**. *1st International Workshop on Service-Oriented Computing for AI Applications*. Tunis, Tunisia. 2024.

- Juan C. Alonso, Sergio Segura, Antonio Ruiz-Cortés. **AGORA: Automated Generation of Test Oracles for REST APIs (Distinguished Artifact Award)**. *32nd ACM SIGSOFT International Symposium on Software Testing and Analysis (ISSTA 2023)*. Seattle, USA. 2023.
- Juan C. Alonso. **Automated Generation of Test Oracles for RESTful APIs**. *30th ACM Joint Meeting on European Software Engineering Conference and Symposium on the Foundations of Software Engineering, ACM Student Research Competition (ESEC/FSE 2022)*. Singapore. 2022.
- Sergio Segura, Juan C. Alonso, Alberto Martín-López, Amador Durán, Javier Troya, Antonio Ruiz-Cortés. **Automated Generation of Metamorphic Relations for Query-Based Systems**. *7th International Workshop on Metamorphic Testing (MET'22)*. Pittsburgh, USA. 2022.
- Juan C. Alonso. **Automated generation of realistic test inputs for web APIs**. *29th ACM Joint Meeting on European Software Engineering Conference and Symposium on the Foundations of Software Engineering, ACM Student Research Competition (ESEC/FSE 2021)*. Athens, Greece. 2021.

## **R&D PROJECTS**

### European projects:

- **Trust4AI. Trustable AI-Driven Internet Search.**  
Funding: EU Horizon Europe (NGI Search project).  
Duration: 2024 - 2025

### National projects:

- **LOTUS: digital transFormaTion of the pUblIC administration driven by intelligent contractsS.**  
Funding: Ministerio de Ciencia, Innovación y Universidades (Spanish Government).  
Duration: 2022 – 2024
- **BUBO: Improving the development, reliability and governance of digital services through bot-human collaboration.**  
Funding: Ministerio de Ciencia, Innovación y Universidades (Spanish Government).  
Duration: 2022 – 2025
- **HORATIO: Improvements in the reliability, customization and operating costs of software services regulated by user agreements.**  
Funding: Ministerio de Ciencia, Innovación y Universidades (Spanish Government).  
Duration: 2019 – 2021

### Regional projects:

- **EKIPMENT-PLUS: Knowledge-based process performance improvement: A multidisciplinary empirical approach based on people, equipment, software, and data.**  
Funding: Junta de Andalucía (Consejería de Economía y Conocimiento) (Andalusian Government).  
Duration: 2020 – 2022
- **APOLO: Technologies for highly reliable service-oriented systems regulated by user contracts.**  
Funding: Junta de Andalucía (Programa operativo FEDER) (Andalusian Government).  
Duration: 2019 – 2021

## RESEARCH STAYS

- **University of Washington, Seattle (USA).**  
Supervisor: Michael D. Ernst.  
Duration: July – September 2023 (2 months).
- **Università della Svizzera Italiana, Lugano (Switzerland).**  
Supervisor: Gabriele Bavota.  
Duration: April – May 2024 (1 month).

## ACKNOWLEDGMENTS AND AWARDS

- **Distinguished Artifact Award ISSTA 2023** (July 2023).
- **Second Place Winner in ACM SRC Grand Finals 2023** (May 2023).
- Recipient of the **best scientific publication award** of January 2023 of the School of Informatics (University of Seville).
- **Winner of the ACM Student Research Competition** at the European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE 2022).
- **Mentee at IMFAHE** ([www.imfahe.org](http://www.imfahe.org)), the International Mentoring Foundation for the Advancement of Higher Education.
- **Best Master Thesis of my promotion and best record of my year.** (July 2022).
- **Award for best Bachelor Thesis of my promotion.** (November 2021).

## TEACHING EXPERIENCE

- **Architecture and Integration of Software Systems.** Software Engineering degree, 2<sup>nd</sup> year. University of Seville.
  - 2021-2023: Laboratory sessions (English and Spanish groups).
- **Data and Algorithm Analysis and Design.** Information technologies degree, 2<sup>nd</sup> year. University of Seville.
  - 2021-2022: Laboratory sessions.
- **Intelligent Access to Information.** Software Engineering degree, 4<sup>th</sup> year. University of Seville.
  - 2021-2022: Laboratory sessions.
- **Operating Systems.** Software Engineering degree, 2<sup>nd</sup> year. University of Seville.
  - 2021-2024: Laboratory sessions.
- **Requirements Engineering:** Software Engineering degree, 3<sup>rd</sup> year. University of Seville.
  - 2022-2024: Laboratory sessions.

## EDUCATION

- **PhD in Computer Science**.....2022 – 2025  
Escuela Técnica Superior de Ingeniería Informática (University of Seville) – Seville (Spain)  
**Graduation with honors (cum laude)**

- **Master's degree in Software Engineering – CLOUD, Data and IT Management**..... 2021 - 2022  
Escuela Técnica Superior de Ingeniería Informática (University of Seville) – Seville (Spain)  
**Average: 9.59** (over 10), Best record of my year. **Subjects with distinction: 5** (including thesis).
- **Bachelor's degree in Software Engineering**..... 2016 - 2021  
Escuela Técnica Superior de Ingeniería Informática (University of Seville) – Seville (Spain)  
University of Mannheim (Germany) – Erasmus stay (2019-2020)  
**Average: 7.82** (over 10). **Subjects with distinction: 3** (including thesis)

## LANGUAGES

- **Spanish.** Native proficiency.
- **English.** Bilingual proficiency. C2 level certified by Cambridge.
- **Japanese.** Intermediate working proficiency. B1 level certified by the Institute of Languages of the University of Seville.