

# Alison Fernandez Blanco

PHD · COMPUTER SCIENCE

Santiago, Chile

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## Education

### University of Chile

Santiago, Chile

PHD IN COMPUTER SCIENCE

2018-2023

- Thesis: "Empirical Foundation for Memory Usage Analysis Through Software Visualizations"
- Advisor: Dr. Alexandre Bergel, Dr. Juan Pablo Sandoval Alcocer
- CONICYT PhD Scholarship

### Universidad Mayor de San Simón

Cochabamba, Bolivia

LICENCIATURA EN INGENIERIA INFORMÁTICA

2012-2017

- Undergrad research: "Metáfora visual para el análisis y la navegación en la evolución de datos del proceso de software"
- Advisor: Dr. Alexandre Bergel
- Ranking: 1(first) of 4.

## Educational Experience

### Assistant Professor

Santiago, Chile

PONTIFICIA UNIVERSIDAD CATÓLICA DE CHILE

2024-Today

- Course: Ingenieria de Software. Semester: 2024-2

### Part-time Professor

Santiago, Chile

PONTIFICIA UNIVERSIDAD CATÓLICA DE CHILE

2023-2024

- Course: Topicos Avanzados en Ingenieria de Software. Semester: 2023-2
- Course: Testing. Semester: 2023-1, 2024-1
- Course: Ingenieria de Software. Semester: 2023-1, 2023-2

### Coordinator Assistant

Santiago, Chile

PONTIFICIA UNIVERSIDAD CATÓLICA DE CHILE

2023

- Course: Actividad de Graduación - Magister en Inteligencia Artificial.

### Teaching Assistant

Santiago, Chile

UNIVERSITY OF CHILE

2020-2022

- Course: Minería de Datos. Semester: 2022-1
- Course: Introduccion a la Minería de Datos. Semester: 2020-1, 2020-2, 2021-1, 2021-2

### Teaching Assistant

Cochabamba, Bolivia

UNIVERSIDAD MAYOR DE SAN SIMÓN

2016

- Course: Lógica. Semester: 2016-1, 2016-2

## Professional Experience

### RESEARCH & INDUSTRIAL EXPERIENCE

#### Asesor, Computer Science

Santiago, Chile

CONCURSO POLÍTICAS PÚBLICAS

2023

- Project: "Registro electrónico nacional de prescripción de fármacos con alto potencial adictivo: mirada a posibles ventajas y dificultades de implementación"
- XVIII Concurso Políticas Públicas
- Contact: Dr. Andres Neyem

## PhD Candidate, Computer Science

UNIVERSITY OF CHILE

Santiago, Chile

2018-2023

- Project: “Fine-Grained Memory Issues Characterization”
- Part of Intelligent Software Construction laboratory (ISCLab)
- Contact: Dr. Alexandre Bergel

## Researcher & Software Developer

SEMANTICS S.R.L.

Cochabamba, Bolivia

2017-2018

- Semantics is a Smalltalk-based software development company that provides programming language support, libraries, and tools to improve daily software development activities.
- Our team continuously supports different open-source projects around the world. <http://semantics.bo/>
- The work developed at Semantics is open source and available at <https://github.com/OBJECTSEMANTICS/>
- Contact: Dr. Juan Pablo Sandoval Alcocer

## Research

### INTERNATIONAL JOURNAL PUBLICATIONS (WEB OF SCIENCE)

**Asking and Answering Questions During Memory Profiling.** *Alison Fernandez Blanco, Araceli Queirolo Córdova, Alexandre Bergel, Juan Pablo Sandoval Alcocer.* IEEE Transactions on Software Engineering, vol. 01, pp. 1-21, 2024. (URL)

**An Empirical Study Of Mobile Code Offloading In Unpredictable Environments.** *Pablo Sanabria, Andres Neyem, Juan Pablo Sandoval Alcocer, Alison Fernandez Blanco.* IEEE Access, vol. 11, pp. 69263-69281, 2023. (URL)

**Software Visualizations to Analyze Memory Consumption: A Literature Review.** *Alison Fernandez Blanco, Alexandre Bergel, Juan Pablo Sandoval Alcocer.* ACM Computing Surveys (CSUR), 55(1), 1-34. 2022. (URL)

**A domain-specific language to visualize software evolution.** *Alison Fernandez, Alexandre Bergel.* Information and Software Technology, vol. 98, p. 118-130. 2018. (URL)

### PUBLICATIONS IN INTERNATIONAL CONFERENCES: FULL RESEARCH PAPERS

**A Manual Categorization Of New Quality Issues On Automatically-Generated Tests.** *Geraldine Galindo Gutierrez, Maximiliano Narea Carvajal, Alison Fernandez Blanco, Nicolas Anquetil, Juan Pablo Sandoval Alcocer.* IEEE International Conference on Software Maintenance and Evolution ICSME 2023. (URL)

**Visualizing Memory Consumption with Vismep.** *Alison Fernandez Blanco, Alexandre Bergel, Juan Pablo Sandoval Alcocer, Araceli Queirolo Córdova.* Proceedings of 10th IEEE Working Conference on Software Visualization. VISST 2022. (URL)

**Effective Visualization of Object Allocation Sites.** *Alison Fernandez Blanco, Juan Pablo Sandoval Alcocer, Alexandre Bergel.* IEEE International Conference on Software Visualization. 2018. (URL)

### WORKSHOPS AND NIER PAPERS

**A Developer’s Guide to Building and Testing Accesible Mobile Apps.** *Juan Pablo Sandoval Alcocer, Leonel Merino, Alison Fernandez-Blanco, William Ravelo-Mendez, Camilo Escobar-Velasquez, Mario Linares-Vasquez.* ACM International Conference on the Foundations of Software Engineering, FSE - Tutorials, 2024. (to appear)

**DGT-AR: Visualizing Code Dependencies in AR.** *Dussan Freire-Pozo, Kevin Cespedes-Arancibia, Leonel Merino, Alison Fernandez-Blanco, Andres Neyem and Juan Pablo Sandoval Alcocer.* 11th IEEE Working Conference on Software Visualization. 2023. (URL)

**SmallEvoTest: Genetically Created Unit Tests in Pharo.** *Alexandre Bergel, Geraldine Galindo Gutiérrez, Alison Fernandez Blanco and Juan-Pablo Sandoval Alcocer.* Proceedings of International Workshop on Smalltalk Technologies (IWST 2023). (URL)

**Deviation testing: A test case generation technique for GraphQL APIs.** *Daniela Meneses Vargas, Alison Fernandez Blanco, Andreina Cota Vidaurre, Juan Pablo Sandoval Alcocer, Milton Mamani Torres, Alexandre Bergel, Stephane Ducasse.* International Workshop on Smalltalk Technologies. 2018. (URL)

**Analyzing Dynamic Information with Spy and Roassal: An Experience Reports.** *Alison Fernandez, Diego Gabriel Nuñez Duran, Alejandro Infante, Alexandre Bergel.* 1st International Workshop on Software Analytics (collocated with SANER’15). (URL)

## UNDER REVIEW

**Assessing Automatically-Generated Tests Code Quality: Beyond Traditional Test Smells.** *Juan Pablo Sandoval Alcocer, Geraldine Galindo-Gutierrez, Maximiliano Narea Carvajal, Alison Fernandez-Blanco, Andres Neyem, Nicolas Anquetil.* *Empirical Software Engineering.* (indexed journal)

**Improving Variable Names from Automatic Generated Test with Lightweight Heuristics.** *Geraldine Galindo Gutierrez, Juan Pablo Sandoval Alcocer, Alexandre Bergel, Alison Fernandez Blanco, Andres Neyem.* *Journal of Software: Evolution and Process.* (indexed journal)

## UNDER PREPARATION

**Enhancing Visualization and Assessment Techniques in Software Capstone Project Development.** *Andres Neyem, Jose Carrasco, Alison Fernandez Blanco, Juan Pablo Sandoval Alcocer.*

**Kroker: A Visual Tool for Analyzing Relative Code Coverage.** *Francisca Ibarra, Juan Pablo Sandoval Alcocer, Alison Fernandez Blanco, Fabian Beck.*

## Honors & Awards

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- 2023 **Doctoral Medal**, University of Chile
- 2022 **Distinguished Paper Award**, Lo Mejor de lo Nuestro 2022 (JCCC 2022), Chile
- 2019 **Beca de Doctorado para extranjeros**, CONICYT, Chile
- 2018 **Beca de Doctorado NIC-DCC**, University of Chile, Chile
- 2016 **Distinguished project - Summer School**, Universidad Mayor de San Simón, Bolivia
- 2015 **Reconocimiento al rendimiento academico destacado**, Universidad Mayor de San Simón, Bolivia
- 2015 **Noveno Lugar - ACM-ICPC**, South America Regional, Bolivia
- 2014 **Distinguished project - Summer School**, Universidad Mayor de San Simón, Bolivia

## Research Community Implications

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- 2025 **Program Committee Member**, International Conference on Mining Software Repositories (MSR)
- 2024 **Reviewer**, Empirical Software Engineering Journal - EMSE
- 2024 **Program Committee Member**, IEEE Working Conference on Software Visualization (VISOFT)
- 2023 **Program Committee Member**, IEEE Working Conference on Software Visualization (VISOFT)
- 2023 **Web Chair**, IEEE Working Conference on Software Visualization (VISOFT)
- 2022 **Program Committee Member**, IEEE Working Conference on Software Visualization (VISOFT)
- 2022 **Program Committee Member**, International Workshop on Visualization in Testing of Hardware, Software, and Manufacturing (TestVis collocated with IEEE VIS)
- 2022 **External Reviewer**, IEEE/ACM International Conference on Software Engineering (ICSE)
- 2022 **Web Chair**, IEEE Working Conference on Software Visualization (VISOFT)
- 2021 **Program Committee Member**, IEEE Working Conference on Software Visualization (VISOFT)
- 2021 **Web Chair**, IEEE Working Conference on Software Visualization (VISOFT)
- 2020 **Program Committee Member**, International Workshop on New Interfaces for Programming (NIP)
- 2020 **Artifact Evaluation Committee**, IEEE Working Conference on Software Visualization (VISOFT)
- 2020 **Web Chair**, IEEE Working Conference on Software Visualization (VISOFT)
- 2019 **Web Chair**, IEEE Working Conference on Software Visualization (VISOFT)

## TALKS

- 2023 - *Pontificia Universidad Catolica de Chile, Chile.* Talk: Vismep: Visualizing Memory Behavior of Python; Contact: Dr. Leonel Merino.
- 2017 - *Universidad Nacional de La Plata, Argentina.* Talk: Analyzing Software Evolution Through MultiPile Matrix; Contact: Dr. Leandro Caniglia.
- 2017 - *Universidad Mayor de San Simón, Bolivia.* Talk: Analyzing Software Evolution Through MultiPile Matrix; Contact: Marcelo Flores Soliz.

## Mentoring

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2023 **Carolina Melendez**, Project: Improvements in the DrTest tool. (URL)

*Google Summer of  
Code*

2021 **Araceli Nicole Queirolo Córdova**, Memoria para optar al título de Ingeniera Civil en Computación. (URL)

*University of Chile*

## Languages

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Spanish (native), English (professional proficiency)

## References

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### **Dr. Alexandre Bergel**

RelationalAI, Switzerland

Email: [alexandre.bergel@me.com](mailto:alexandre.bergel@me.com)

Webpage: <http://www.bergel.eu>

### **Dr. Juan Pablo Sandoval Alcocer**

Pontificia Universidad Católica de Chile, Chile

Email: [juanpablo.sandoval@ing.puc.cl](mailto:juanpablo.sandoval@ing.puc.cl)

Webpage: <https://jpsandoval.github.io/index.html>