Catarina Gamboa

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Education

September 2021 - NOW

DUAL PHD DEGREE IN SOFTWARE ENGINEERING
CMU | Portugal
Carnegie Mellon University and Faculdade de Ciências da Universidade de Lisboa
Advised by Alcides Fonseca and Jonathan Aldrich

Current interests include Programming Languages Design, Software Verification and how we can improve them with Human Computer Interaction techniques and make them useful to developers in their daily lives.

September 2019- January 2022

MASTER DEGREE IN INFORMATICS ENGINEERING - SOFTWARE ENGINEERING
Faculdade de Ciências da Universidade de Lisboa
GPA: 18/20

The courses included:
- Software Design (18/20);
- Software Reliability (18/20);
- Compiling Techniques (19/20);
- Software Verification and Validation (18/20);

Final Dissertation on *"LiquidJava: Extending Java with Refinements"* advised by Alcides Fonseca professor at University of Lisbon and by Chris Timperley professor at Carnegie Mellon University.

2016-2019

BACHELOR IN INFORMATICS ENGINEERING
Faculdade de Ciências da Universidade de Lisboa
GPA: 17/20; class A in EECC; 2nd in class

The courses included:
- Algorithms and Data Structures (18/20);
- Construction of Sotware Systems (18/20);
- Principles of Programming (20/20);
- Information Systems Analysis and Design (18/20).

ADVANCED COURSES

April 2022

Science and the Media — bringing together scientists, journalists and society
cE3c, Faculdade de Ciências da Universidade de Lisboa

Professional Experience

September 2019 - July 2020

Teaching Assistant in the Informatics Department (*Monitor*)
Faculdade de Ciências da Universidade de Lisboa
- Taught courses on Programming for Bachelor students of Information Technology, Mathematics, Physics and others. The courses were Programming I (LTI), Programming II (LTI) and Programming II.

July 2019

Summer internship
Runtime Revolution
- One month summer internship in the company of software development Runtime Revolution. Developed some projects using Ruby on Rails and React.

Presentations and Publications

October 2022

[Poster] **LiquidJava : Improving the Usability of Liquid Types for Reliable Software**
Catarina Gamboa, Alcides Fonseca and Jonathan Aldrich.
2022 CyLab Partners Conference, at Carnegie Mellon University, Pittsburgh, PA, USA.

March 2022

[Demo] **Dive into LiquidJava - Extending Java with Liquid Types**
Catarina Gamboa, Paulo Santos, Christopher S. Timperley, and Alcides Fonseca. 2022. Accepted demonstration at International Conference on the Art, Science, and Engineering of Programming.

January 2021

Understandable and Useful Error Messages for Liquid Types
Alcides Fonseca, Catarina Gamboa, João David, Guilherme Espada, Paulo Canelas. 2021. Talk at WITS - Workshop on the Implementation of Type Systems 2022, colocated with POPL 2022

October 2021

User-driven design and evaluation of Liquid Types in Java
Catarina Gamboa, Paulo Santos, Christopher S. Timperley, and Alcides Fonseca. 2021. Presentation in Human Aspects of Types and Reasoning Assistants Workshop, co-located with SPLASH 2021.

September 2021

LiquidJava: Adding Lightweight Verification to Java
Catarina Gamboa, Paulo Santos, Christopher S. Timperley, and Alcides Fonseca. 2021. Presented Paper. In INForum 2021 - Informatics Symposium. Related poster presented at Inforum and Ciências Research Day 2021.

May 2021

[Poster] **LiquidJava: Extending Java with Refinement Types**
Catarina Gamboa, Paulo Santos, Christopher Timperley, and Alcides Fonseca. 2021. Poster. In LASIGE Workshop 2021.

November 2020

Extending Java with Refinements
Catarina Gamboa, Paulo Santos, and Alcides Fonseca. 2020. Student Paper.
In Program Semantics, Specification and Verification: Theory and Applications (PSSV-2020).

Research Experience

October 2020 - now

Researcher at LASIGE@FCUL and S3D@CMU
Faculdade de Ciências da Universidade de Lisboa and Carnegie Mellon University

- Started to do research at LASIGE during her master thesis, one of the best research units in Portugal. Currently is pursuing a PhD at both LASIGE and also at the Software and Societal Systems Department (S3D) at CMU.

Awards

April 2022

Huawei Scholarship
- Was awarded with one of the 50 shcolarships given in the scope of Huawei's program Seeds For The Future 2.0, in collaboration with .PT, to empower students in the STEM areas.

September 2021

Award for Best Student Poster
- Got the award for best poster for the work on "LiquidJava: Adding Lightweight Verification to Java" in the conference INFORUM - Informatics Symposium 2021.

2021

MaxData Award - Informatics Excellence
- Received the academic excellence award for the best student on the first year of the MSc on Informatics Engineering

2018-2020

Diploma of Academic Merit
- Received academic excellence awards for the three years of the Bachelor degree for the averages obtained.

November 2018

3rd Place on the Contest *Wine Discoveries*
European City of Wine 2018 Torres Vedras and Alenquer

- Belonged to the team that received the third place on the Business Ideas Contest *Wine Discoveries*, with the wine tourism project *Gamboa's Place*.

Outreach, Leadership and Teamwork

Co-organizer of events at LASIGE
September 2021

- Joined the organizer commitee for the LASIGE Welcome Day 2021 and 2022, organized team building activities such as paintball and movie nights for all members of the research unit, joined the PhD student commission to help improve the wellbeing and connection among PhD students.

Student Volunteer at POPL 2021 and 2022
January 2021 and 2022

- Participated as a student volunteer at the 48th ACM SIGPLAN Symposium on Principles of Programming Languages, the first online version of POP, and in the 49th edition in the first hybrid version of the conference.

Board member of Associação Alegres Olhares
March 2019- now

- Elected board member of the non-profit cultural association Alegres Olhares in the last two elections for the corporate entities. The association organizes and co-organizes cultural projects using creativity to take the traditional projects to our present day.

Music Groups
2010-2022

- Spent 12 years in the Band of the Philharmonic Society of Olhalvo, where she played transverse flute and piccolo and was often a soloist. The band frequently enrolls in Portuguese and International concerts, having an average of 30 concerts per year.
- Catarina also belongs to the group Noses com Vozes, a group of folk Portuguese traditional music that has launched their first album in November 2019.

Participation in Theater Groups
2017-2020

- Belonged to the group of Academic Theater of the Universidade de Lisboa (TUT) from September 2019 to September 2020. Participated in the theater group of Faculdade de Ciências da Universidade de Lisboa in 2017.

Participation and Organization of Events

- Participated and helped coordinate several local events, as a volunteer, in associations of cultural development such as Sociedade Filarmónica Olhalvense and Associação Alegres Olhares.

Other Education

2nd Grade on Transverse Flute

- Had transverse flute classes since the age of 6 and in 2014 got the 2nd grade of transverse flute by the Torres Vedras Conservatory.

6th Grade on Classical Dance

- Had classes of classical dance from 2006 to 2015 and achieved the 3rd Level of the "Certificate in Graded Examination in Dance" by Royal Academy of Dance, for the 6th grade of classical dance (ballet).

Other Activities

Monitor at Verão ULisboa and Ciências Open Day
May and July 2022, July 2018

Faculdade de Ciências da Universidade de Lisboa

- Helped in activities to promote Programming and Computer Science for elementary and high school students.

Volunteer in the event *Building the Future*
January 2019

Microsoft and imatch

- Participated as volunteer on the organization of the event Building the Future which joined technology, transformation and leadership to empower people and companies. The event was promoted by Microsoft in colaboration with imatch.

Summer Course on Heritage and Creativity
July 2017

Instituto Politécnico de Leiria

- Participation on the International Summer Course about *Heritage and Creativity.*

Weekly Volunteer with Children
2015 - 2022

Olhalvo