SOFIA REIS

PERSONAL INFORMATION

email	sofia.o.reis@tecnico.ulisboa.pt
website	https://sofiaoreis.github.io/
social media	○ · ⑩ · 🐦

EDUCATION

2018–2022 — Instituto Superior Técnico, University of Lisbon, PT

PhD in Computer Science and Engineering
GPA: 19.4/20 · Waiting for PhD proposal defense · Graduation: *Feb*, 2022
Thesis: *Understanding and Improving Security-oriented Static Analysis Techniques*
Advisor: Prof. Rui Abreu · rui@computer.org

2016–2017 — Leiden Institute of Advanced Computer Science, NL

ERASMUS+ PROGRAMME
GPA: 7.5/10 · *Computer Science and Advanced Data Analytics*
Data Mining, Social Network Analysis, Big Data and Evolutionary Algorithms
Ref: Prof. Rosaldo Rossetti · rossetti@fe.up.pt

2012–2017 — Faculty of Engineering of the University of Porto, PT

BSc+MSc (Integrated Master)
GPA: 15/20 · *Informatics and Computing Engineering* (*A3ES accreditation*)
Thesis ⚿: Assessing software vulnerabilities using Naturally Occurring Defects
Mark: 19/20 - top 5% of the best thesis in the class of 2017
Advisor: Prof. Rui Abreu · rui@computer.org

WORK EXPERIENCE

2019–2023 — PhD Student/Researcher, TÉCNICO/INESC-ID — Lisbon, PT

Research
Performing research on static analysis optimization to improve software security and productivity. Funded by the Portuguese NSF (4 years). This research is performed in parallel with a project funded by CMU Portugal (*SecurityAware: Fine-grained approach to detect and patch vulnerabilities*). The project aims to develop a novel framework to efficiently detect security issues through the implementation of more fine-grained approaches to CI static analysis. · Ref: Rui Abreu · rui@computer.org

2018–2019 — Junior Researcher, INESC-ID — Lisbon, PT

Analysis of the entire corpus of documents published in the last 30 years in the Portuguese law search engine. Funded by the Portuguese Government. Technologies: Python, Grafana, SQL, Pandas, Matplotlib
Ref: José Borbinha · jlb@tecnico.ulisboa.pt

2017–2018 — RPA Developer, KPMG — Porto, PT

Industry
Robotic Process Automation Developer. Responsible for designing and delivering automations in Automation Anywhere for VAT processing in the pharmaceutical sector. Certified in Automation Anywhere. License: `AAADVC-Fv5QqG1JlD` · Technologies: Automation Anywhere and JavaScript
Ref: Lara Conceição and Daniel Pires

Teaching Assistant
Winter, 2019/20 · Software Engineering ⚿ - Post-Graduation · 3-month course to AskBlue and Deloitte employees (1.5 month each). Instituto Superior Técnico, University of Lisbon.
Ref: António Rito Silva · rito.silva@tecnico.ulisboa.pt
Spring, 2019 · Software Engineering ⚿ - 3rd year course · Full 6-month course. Instituto Superior Técnico, University of Lisbon. · Ref: Rui Abreu · rui@computer.org · 8.62 out of 9
Fall, 2018 · Foundations of Programming ⚿ - 1st year course · Full 6-month course. Instituto Superior Técnico, University of Lisbon. · Ref: Alberto Abad · alberto.abad@tecnico.ulisboa.pt · 9 out of 9 🏆

PROJECTS

2018–2019 — Lithium Slicer (Tool)

Open-Source
Lithium Slicer is a program slicer based on the Mozilla lithium tool, a test minimization tool to help developers create small test inputs (i.e., code snippets) in their bug reports. This tool combines software fault localization and dynamic slicing to improve software fault localization accuracy for Java programs. The approach improved the diagnostic accuracy up to 73.7% (13.4% on average). Technologies: Python, Bash and Java — Research Project (ck. Publication [1])

2016–2020 — SecBench (Dataset + Crawler)

SecBench is a dataset of 676 real security vulnerabilities fixes mined from GitHub repositories to boost tool evaluation since testing tools using mutations might lead to a misleading assessment of the capabilities of the tools. Technologies: Redis, Google Cloud Storage, Github v3 API, Python, HTML, CSS, JavaScript, D3.js, jQuery — Research Project (ck. Publication [4])

EXTRACURRICULAR

Relevant Training   **2020** · Google Get Ahead Program: Virtual program for selected CS students from all over EMEA. The program involved technical challenges, YouTube live trainings and interview workshops. 500 participants from all over EMEA · July-August (invitation only) · 8-weeks

2020 · ✸ 🏆 Qiskit Summer School: Virtual summer school on quantum computing by IBM Quantum. Topics went from the basics (qubits, circuits, etc) to simulating chemistry on a quantum computer. Labs only available to 2000 out of the 5000 participants. 9 labs required · July · 2-weeks

2020 · Finding security vulnerabilities in Java and JavaScript with CodeQL Workshops. Two virtual workshops of hands-on vulnerability detection with CodeQL · Online at GitHub Satellite, May · 1-day

2019 · ✸ Facebook Testing and Verification Symposium (FaceTAV) , Facebook London, UK, November (invitation only) · 2-days

2019 · ✸ Future of Computing Conference, Porto, PT, July · 1-week

2019 · VMCAI Summer School, Lisbon, PT, January · 4-days

2018 · Facebook Testing and Verification Symposium (FaceTAV'18), Facebook London, UK, November (invitation only) · 2-days

Volunteer   **2019** · Future of Computing Conference, Porto, PT · 1-week

2019 · ACM Symposium on Principles of Programming Languages (POPL'19), Lisbon, PT · 1-week

2018 · International Conf. on Software Quality, Reliability and Security (QRS'18), Lisbon, PT · 3-days

2017 · Talk a Bit Conference, Porto, PT — organized by FEUP · 1-day

Committee (Pro Bono)   **2018–2020** · CommitPorto — Tech conference annually organized by AlumniEI-FEUP · Responsible for all the event's marketing material. Leading the 2020 event in all fronts: marketing, sponsorship and agenda · 3 years

2020 · ICST2020 — International Conference in Software Testing, Validation and Verification. Sponsorship and Social Media · 1-year

Organization (Pro Bono)   **2019** · Vice-President of AlumniEI-FEUP · Co-leading different projects: CommitPorto, JobIT, Mentorados. Lead of the Image and Communication departments · 2-years

2016–2017 · Lead of the Image Department at AEFEUP · Team leader of a team of 5-designers. Produced graphical material to advertise the association events. TECHNOLOGIES: Adobe Photoshop, Illustrator and Lightroom · 1-year

HONORS, AWARDS AND GRANTS

Honors   **2020** · 🏆 Quantum Excellence in Qiskit Global Summer of School awarded by IBM Quantum. Mark: 100%/100% (a total of 9 labs completed)

2020 · 🏆 Excellence in Teaching the Foundations of Programming awarded by Instituto Superior Técnico, University of Lisbon (excellence was awarded by the students).

2020 · IBM Quantum Challenge Advanced Badge (196/1745). Finished last challenge (required score: 1600/my score: 147/winner score: 45)

Grants   **2019** · PhD Scholarship awarded by the Portuguese NSF, cf. SFRH/BD/143319/2019 · 4 years

Speaking Engagements   **2018** · ⚲ Poster at PhD OpenDays 2018, Lisbon, PT

2017 · ⚲ Poster at International Workshop on Principles of Diagnosis, Bréscia, IT

Publications   [1] Sofia Reis, Rui Abreu and Marcelo D'Amorim. 2019. **Demystifying the Combination of Dynamic Slicing and Spectrum-based Fault Localization**. International Joint Conference on Artificial Intelligence (IJCAI) · *Conference Paper* · Core: A* · 17.8% (850/4752)

[2] Sofia Reis. 2018. **Leveraging Known Vulnerabilities to Modernize Static Analysis Tools**. PhD OpenDays 2018. Lisbon, Portugal · *Poster*

[3] Sofia Reis and Rui Abreu. 2017. **A Database of Existing Vulnerabilities to Enable Controlled Testing Studies**. International Journal of Secure Software Engineering (IJSSE) 8 (3): 1-23 · *Journal Paper* - Invited Paper Extension

[4] Sofia Reis and Rui Abreu. 2017. **SECBENCH: A Database of Real Security Vulnerabilities**. Secure Software Engineering in DevOps and Agile Development (SecSE), co-located with ESORICS · *Workshop Paper*

[5] Sofia Reis and Rui Abreu. 2017. **Using Github to Create a Dataset of Natural Occurring Vulnerabilities**. International Workshop on Principles of Diagnosis (DX) · *Abstract and Poster* · Core: B

September 1, 2020