JOÃO MADEIRA PEREIRA

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EDUCATION

M.Sc. in Computer Science and Engineering - Instituto Superior Técnico, University of Lisbon   2022 - 2024
With specializations in:

- Cyber-Security

- Distributed Systems

Final grade: 18/20.

B.Sc. in Computer Science and Engineering - Instituto Superior Técnico, University of Lisbon   2019 - 2022

EXPERIENCE

Teaching Assistant   Sept 2023 - *Ongoing*
Instituto Superior Técnico, University of Lisbon   *Lisbon, Portugal*

- Conducted laboratory classes for the Computer Science master's level courses Software Security 2023/24 and 2024/25.

- Recognized as an Excellent Faculty Member for the 2023/2024 academic year.

- Invited to be a TA for the upcoming master's level Cloud Computing and Virtualization 2024/25 course and for the bachelor's level Distributed Systems 2024/25 course.

R&D Engineer Intern   Jul 2023 - Sept 2023
EDP   *Lisbon, Portugal*

- Collaborated with the Positive Energy Communities team on three prominent large-scale international EU Horizon Europe projects (SATO, Smart2B, and POCITYF).

- Designed and implemented an optimization algorithm to reduce costs associated with electrical vehicle (EV) charging, contributing to sustainable energy solutions.

- Developed programs to process and analyze data for improving building efficiency and environmental sustainability, contributing to smart cities initiatives.

Mathematics Tutor   Sept 2021 - Jul 2022
MCoach   *Lisbon, Portugal*

- Supported students with helpful study habits, exam strategies, and problem-solving skills.

- Collaborated with students to complete homework assignments, identify lagging skills, and correct weaknesses.

PROJECTS

Smt.ml. Contributed to Smt.ml, an open-source frontend for multiple SMT solvers written in OCaml and used in both industrial and academic projects. Implemented support for a new backend integrating the cvc5 SMT solver and played a key role in refactoring the internal design to accommodate multiple solver backends.

OCaml Bindings for the cvc5 SMT Solver. Designed and developed cvc5.ml, an open-source and comprehensive set of OCaml bindings for the cvc5 SMT solver, enabling seamless integration of cvc5 into OCaml-based tools and programs.

Opam package for cvc5.ml. Created an Opam package for cvc5.ml, streamlining its installation and improving accessibility for OCaml developers by integrating the bindings into OCaml's package ecosystem.

SKILLS

Technical Skills   Python, C/C++, OCaml, Java