Orpheas van Rooij – Curriculum Vitae

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About Me

My main research interests are in programming language semantics of effects, category theory, separation logic, effects handlers, proof assistants, type theory and programming language research in general.

Education

2024-   PhD in Computer Science (Ongoing) - University of Edinburgh

Topic: Algebraic Effects & Handlers, programming language semantics.

2021-2024   MSc in Software Science - Radboud University

Grade: Cum laude
Thesis: A Substructural Type and Effect System
Main Courses: Type Theory & Coq, Category Theory, Coalgebra, Compiler Construction, Semantics and Domain Theory, Program Verification with Types & Logic.

2018-2021   BSc in Computer Science - University of Cyprus

Grade: 9.03/10 (Excellent)
Thesis: An Instrumentation Approach To Web Fuzzing

Publications

- **Affect: An Affine Type and Effect System**

  Proceedings of the ACM on Programming Languages (POPL)
  Recipient of *Distinguished Paper Award*
  Formalising a substructural (affine) type and effect system in Coq that tracks whether continuations are one- or multi-shot for an OCaml-like language with effect handlers and mutable state.

- **webFuzz: Grey-box Fuzzing for Web Applications**

  In Proceedings of the 26th European Symposium on Research in Computer Security (ESORICS)
  Design, implementation and evaluation of webFuzz, a gray-box fuzzing prototype for discovering vulnerabilities in web applications.

Work Experience

Jan 2023 -
Jun 2024   Radboud University
Teaching Assistant

Assignment correcting and assisting in tutorial sessions for the BSc course Software Verification, the BSc course Complexity, and the MSc course Advanced Programming.

Mar 2021 -
Aug 2021   Networks Research Laboratory, Dept. of Computer Science, UCY
Software Developer

Jun 2019 -   Novatex Solutions Ltd.
Jul 2021   *Software Developer*

Professional Activities

- **SPLV 2025**

  Participant, SPLV summer school 2025

- **VERSEN 2024**

  Awarded (shared) 1st prize at the VERSEN MSc 2024 award, Amsterdam, NL

- **POPL 2024**

  Awarded 1st prize at the ACM Student Research Competition, London, UK

- **ESORICS 2021**

  Research Paper Presenter, Virtual Event

- **Advanced Functional Programming in Haskell**

  Participant, Utrecht Summer School 2021

Languages and Frameworks

- **Rocq, Haskell, Clean, Rust, OCaml, C, Python**
- **Iris, iTasks, TorXakis**