

Orpheas van Rooij – Curriculum Vitae

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About Me

My main research interests are in semantics, effects handlers, type systems, program verification, functional programming, proof assistants and programming language research in general.

Education

- 2024-** PhD in Computer Science (Ongoing) - University of Edinburgh
Topic: Algebraic Effects & Handlers semantics and type systems
- 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 -** Radboud University
Jun 2024 *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 -** Networks Research Laboratory, Dept. of Computer Science, UCY
Aug 2021 *Software Developer*

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

Professional Activities

- **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

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