

# RIJNARD VAN TONDER, PH.D.

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## ABOUT ME

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Engineering leader with 8 years of expertise in pushing the frontier of developer tools and automated program analysis. I believe AI-assisted coding is the next frontier of developer tooling. I'm particularly excited about powering automated code transformation with flagship AI models.

**Currently**—Returning from a 6 month career break after exploring AI models for building multimodal PDF processing. I'm building the world's largest [ redacted, let's talk :) ] from highly irregular and unstructured PDFs.

**Experience**—I have rich start-up experience (small to midsize, series A through D) and know how to ship rapidly while maintaining a high software quality standards. I have a deep research background in developer tools and programming languages.

I offer an ideal balance of product-focused engineering excellence and practical research application. I've solo-authored a Best Industry Paper out of 700 authors and their submissions [2].

I am a team player. I've lead efforts to prototype and deploy services end-to-end (e.g., my work on the Move smart contract [package registry](#) and [viewer](#)). I rely heavily on others for feedback and to hone ideas and implementation when driving technicals of company-wide concerns ([example RFC of my work at Sourcegraph](#)).

I'm an excellent communicator and technical writer, and I tailor my ability to business needs. My peers get excited when I publish RFCs for driving technical work. I write engaging technical blog posts that consistently feature on the front page of Hacker News ([sample post at #6](#)) and reach thousands of developers.

I'm proud to independently maintain [Comby](#), a popular dev tool for rewriting code (2.5K stars on GitHub). Comby grew as a result of direct community engagement and feedback to address the need for automated refactoring tools.

I've given highly successful industry and academic talks (e.g., [Strangeloop talk](#) with 12K views).

**Personal**—I was most recently employed at [Mysten Labs](#) on an O-1 Extraordinary Ability visa in the USA. I am a South African citizen. This document is current as of May 2025.

## EDUCATION

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Ph.D. Computer Science, Carnegie Mellon University, 2014–2019

M. Software Engineering., Carnegie Mellon University, 2014–2017

M. Eng. & BSc. (Hons) Computer Science, Stellenbosch University, 2009–2014

## TECHNICAL SKILLS

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**Programming Languages:** Rust, Go, TypeScript, Python, OCaml, Elm.

**Developer Tooling:** [OpenRouter API](#) and file processing pipelines, Language Server Protocol ([LSP/LSIF](#)), code search at scale ([Zoekt](#)), editor extensions (Visual Studio Code syntax plugins, Emacs lisp plugins, Vim), Docgen (e.g., Docusaurus).

**Research:** Software quality, differential software analysis, automated software testing, program transformation, static analysis, compilers, program analysis, smart contracts, blockchain.

## EMPLOYMENT

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Mysten Labs, Software Engineer & Research Scientist, Palo Alto CA, Dec 2022–Oct 2024

Implemented state-of-the-art developer tools for smart contracts at this blockchain unicorn. E.g., package management and source code checkers for Move, the most advanced smart contract language to date. Explored AI integration for Move smart contract code with Google’s Vertex team.

Sourcegraph, Software Engineer & Research Scientist, San Francisco CA, Oct 2019–Dec 2022

Advanced large-scale code search and refactoring at this developer tools unicorn. E.g., I (re)wrote and maintained mission-critical code to process search queries, code exercised by tens of thousands of devs every day. Early implementer and adopter of the [Language Server Protocol](#) / [LSIF](#) in dev flows.

Facebook, Software Eng. Intern, Menlo Park CA, May–Aug 2018 and May–Aug 2017

Added 5× speedup and advanced taint analysis to [Pyre](#), the Python type checker behind [Instagram](#)’s codebase.

## SELECTED PUBLICATIONS

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1. Rijnard van Tonder, [Verifying and Displaying Move Smart Contract Source Code for the Sui Blockchain](#). *International Conference on Software Engineering, Demonstrations (ICSE-DEMO)*, 2024.
2. Rijnard van Tonder, [You Don’t Know Search: Helping Users Find Code by Automatically Evaluating Alternative Queries](#). **IEEE Best Industry Paper Award**, *International Conference on Software Engineering, Software Engineering in Practice (ICSE-SEIP)*, 2023.
3. Alex Groce, Rijnard van Tonder, Goutamkumar Tulajappa Kalburgi, Claire Le Goues, [Making No-fuss Compiler Fuzzing Effective](#). *Compiler Construction (CC)*, 2022.
4. Rijnard van Tonder, Claire Le Goues, [Tailoring Programs for Static Analysis via Program Transformation](#). *International Conference on Software Engineering (ICSE)*, 2020.
5. Rijnard van Tonder, Claire Le Goues, [Lightweight Multi-language Syntax Transformation with Parser Parser Combinators](#). *Programming Language Design and Implementation (PLDI)*, 2019.
6. Rijnard van Tonder and Claire Le Goues, [Towards s/engineer/bot: Principles for Program Repair Bots](#). *Bots in Software Engineering (BotSE@ICSE)*, 2019.
7. Rijnard van Tonder, Claire Le Goues, [Static Automated Program Repair for Heap Properties](#). **ACM Distinguished Paper Award**, *International Conference on Software Engineering (ICSE)*, 2018.

My citation count is 403 (h-index 10) on [Google Scholar](#).

## PROFESSIONAL SERVICE

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**Co-Chair**, International Conference on Mining Software Repositories (**MSR**), **Industry Track**, 2023.

**Program Committee Reviewer**, International Conference on Software Engineering, Software Engineering in Practice (**ICSE-SEIP**), European Software Engineering Conference and Symposium on the Foundations of Software Engineering (**ESEC/FSE**), **Industrial Track**, International Conference on Automated Software Engineering (**ASE**), **Industry Showcase**, International Conference on Automated Software Engineering (**ASE**, Rapid Response Reviewer Award), International Conference on Software Engineering, New Ideas and Emerging Research (**ICSE-NIER**), International Conference on Mining Software Repositories (**MSR**), Data Showcase, 2022–2024.

**Domain Expert Reviewer**, Dutch Research Council (NWO) [Veni Talent Programme](#) 320,000€ grant, 2024.

**Journal Reviewer**, Springer Empirical Software Engineering (**EMSE**), IEEE Transactions on Software Engineering (**TSE**), Information and Software Technology (**INFOSOF**), ACM Transactions on Software Engineering and Methodology (**TOSEM**), Journal of Systems & Software, New Ideas and Trends (**JSS**), 2019–2023.