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# Ivan Radiček

*Curriculum Vitae*

## Overview

A seasoned professional with 15+ years of technical experience, who has built diverse systems, including full-stack web applications, AI tools, and crypto trading infrastructure. Career spans a variety of environments, from startups and academia to a major corporation like Microsoft. Committed to delivering high-quality products, with a focus on rapid prototyping, incremental refinement, and considering performance from the start of the project. Passionate about teaching, continuous learning, and embracing new challenges.

## Experience

### Professional

2025 **Senior Software Engineer**, *Irreducible*, Remote
Accelerated zero-knowledge (ZK) algorithms on custom hardware. Responsibilities included the design, implementation, and optimization of a compiler, emulator, low-level kernel-like DSL, hardware abstraction layer (HAL), and integration with a general-purpose language (Rust).

2023–Ongoing **Co-founder / CEO / Software engineer**, *Demiurg*, Croatia
Freelance software consulting & education (mostly Rust, but also functional languages). Developed a low-latency distributed communication service and protocol in Rust. Developed a comprehensive full-stack platform in Rust, including client-side WASM compilation. Designed and built a prototype for a DSL compiler in F# and a runtime (virtual machine) in Rust

2024 **Senior Software Engineer**, *Continuum Trading*, Remote
Designed, built, and maintained HF low-latency trading infrastructure using Rust. Extended and optimized infrastructure to integrate with multiple cryptocurrency exchanges. Identified, debugged, and resolved issues with low-quality exchange APIs, enhancing system stability. Developed a distributed, low-latency communication protocol for global node synchronization. Ensured reliability and high performance in real-time HF trading operations.

2017–2023 **Senior Software Engineer**, *Microsoft*, Remote, PROSE team
Research and development of various AI tools for helping developers and beginner programmers; mentoring of young researchers and interns. Developed a technique to parse unstructured documents (e.g., logs, CSVs, HTML pages) into tabular data that performed 60% better than competition. Developed an AI tool that assists low-code users while programming - owned project from research prototype phase to shipping to a product with millions of users. Collaborated and contributed to various AI tools for developers, low-code/no-code users, and students. This also often involved building non-trivial fronted applications using TypeScript and React.

2013–2017 **Project (Research) Assistant**, *TU Wien,* FORSYTE *group*, Vienna, Austria
Research on systems for providing automated feedback to students learning programming. Developed a system that provides students with semi-automated performance-related feedback in a fraction of second. Developed a system that provides functional feedback to students learning to program in Python, C, and Java. The developed tool provides fully automated feedback in 97% of cases in under 10s on average. Also built several frontend applications using JavaScript.

2008–2013 **Software developer and system engineer**, IMENIK D.O.O., Zagreb, Croatia
Worked on backend and fronted of a national phone registry. The backend needed to process several millions of documents per day and consolidate with existing data. Built a ad crawler for Croatian web (including JS evaluation)

### Activities

2021 **Introduction to functional programming in F#**, *Future Hub - Computer Science Summer School*, A series of lectures for advance high-school and university students

2021 **Rust and advanced type systems**, *HACK project, Križevci*, A series of lectures given to advanced university students

2014 **Vienna Summer of Logic**, *Volunteer Collaborator of the Organization*, July 9th to 24th, Vienna, Austria

2012 **Python workshop**, *Culture Shock festival*, Križevci, Croatia
Teaching Python & OO fundamentals.

2008 **Computing and advanced algorithms teaching**, *Computing club Križevci (Informatički klub Križevci)*, Križevci, Croatia
Preparing high school students for computing competition (in C).

## Education

### Academic

2014–2020 **PhD in Computer Science**, *TU Wien*, Vienna, Austria, Thesis: *Automated Feedback Generation in Introductory Programming Education (A Dynamic Program Analysis Approach)*

2010–2012 **Master of Science in Computing**, *University of Zagreb, Faculty of Electrical Engineering and Computing*, Zagreb, Croatia, Thesis: *Design of Bayesian Network Based on Stochastic Simulation Reasoning*

2006–2010 **Bachelor of Science in Computing**, *University of Zagreb, Faculty of Electrical Engineering and Computing*, Zagreb, Croatia, Thesis: *Lightweight Formal System Verification*

### Summer Schools

April, 2016 **Spring School on Logic and Verification 2016**, *Vienna, Austria*

August, 2015 **Summer School Marktoberdorf 2015**, *Marktoberdorf, Germany*

July, 2014 **SAT/SMT Summer School 2014**, *Semmering, Austria*, (*Award of Excellence*)

## Tools

**clara**, `https://github.com/iradicek/clara`, A tool for automated clustering and repair of introductory programming assignments

## Awards

**Verification Mentoring Workshop Scholarship Award**, *Scholarship to attend the Verification Mentoring Workshop (VMW) at CAV*, San Francisco, USA

**Programming Language Mentoring Workshop Scholarship Award**, *Scholarship to attend the SIGPLAN Programming Languages Mentoring Workshop (PLMW) at POPL*, Mumbai, India

## Skills

Languages Rust (professional & academic, 5 years), C# (professional & academic, 10+ years), F# (professional, 2 years), Python (professional & academic, 15+ years), clojure (professional, 6 months), OCaml (intermediate knowledge), JavaScript/TypeScript (intermediate knowledge), React (intermediate knowledge), C (intermediate knowledge), Java (basic knowledge), Coq

Tools GNU/Linux, `git`, SVN, LaTeX, virtualization, PostgreSQL, MySQL.

## Languages

Croatian Native speaker

English Fluent

German Basic understanding