Jonathan Brouwer

SOFTWARE ENGINEER · PROGRAMMING LANGUAGE RESEARCHER

✉ jonathantbrouwer@gmail.com | 📞 +31 (0)6 11250794 | 🏠 www.jonathanb.nl | JonathanBrouwer

About Me

I am ambitious and have a passion for programming. In my free time I like playing chess, bouldering, and spending time on the water.

I grew up around Sneek, but moved to Delft for my studies. I've recently finished my master and I am looking for a fun job to challenge me and to improve myself.

Education

Master in Computer Science

AT DELFT UNIVERSITY OF TECHNOLOGY

Average Grade of 9.0 (Cum Laude)

Sep. 2021 - Apr. 2023

- Thesis in development of Programming Languages

Bachelor in Computer Science and Engineering

AT DELFT UNIVERSITY OF TECHNOLOGY

Average Grade of 9.1 (Cum Laude)

Sep. 2018 - Jul. 2021

- Minor in Electronics for Robotics

Interests

- 🤖 Robotics
- 🥾 Hiking
- 🎮 Video Games
- 🏃 Running

Languages

- **Dutch** at a Native level (C2)
- **English** at a Advanced level (C1)

Contact

Feel free to send me an email if you have any further inquiries.

Work Experience

Teaching Assistant   *Delft*

AT DELFT UNIVERSITY OF TECHNOLOGY   *May. 2022 - Aug 2023*

- Independently created practical assignments for master courses from scratch.
- Helped students during practical sessions to understand the material.
- Taught Rust, Embedded Systems, Compiler Construction, and more.

Software Engineer   *Delft*

AT LOBSTER ROBOTICS   *Dec. 2019 - Sep. 2021*

- Developed an Autonomous Underwater Vehicle (AUV) for ocean monitoring and surveys.
- Drivers written in C, control software written in Python 3.

Knowledge and Experience

Programming languages

Embedded: ® Rust, C C, C++
OOP: ☕ Java, 🐍 Python, .NET
Web: HTML, CSS, Js JavaScript
Other: 🗄 SQL, JSON, OpenCL, VHDL

Development

IDEs: Jetbrains Products, VS Code
Version Control: GitHub, GitLab
Communication: Experienced Scrum user
Operating Systems: 🐧 Linux, ⊞ Windows

Projects

FastGOL: The Fastest Dense Conway's Game Of Life Simulation

- Game of Life is a system designed to show emergence: Complex behaviour from simple rules.
- Using highly optimized Rust and CUDA code, it can simulate more than 10^{13} cells per second.
- This is the fastest dense (= simulating all cells) simulation I'm aware of.

Jonla: An Extensible Programming Language

- A programming language which allows the user to define new language syntax and features.
- Written in Rust

Quadrupel: Control Software for a Quadcopter Drone

- Controlled using no-std Rust running on a Nordic nRF51 microcontroller.
- Achieves remarkable stability only using simple PID controllers.
- Developed for Embedded Systems Lab, a TU Delft course meant to teach students Rust.

Lody: A Dependently Typed Programming Language

- A fully-featured dependently typed language, declaratively defined using Spoofax.
- Dependent types allow the user to write proofs about their code, guaranteeing correctness.
- Developed for my master thesis, which earned the cum laude distinction.

Algorithmic Competitions

I enjoy participating in programming competitions, these are my results at the international level:

42nd place at the Benelux Algorithmic Programming Contest 2019

23rd place at the Benelux Algorithmic Programming Contest 2020

22nd place at the Benelux Algorithmic Programming Contest 2021

17th place at the Benelux Algorithmic Programming Contest 2022