

Fons van der Plas

Curriculum vitae

EDUCATION

- 2023 – 2024 **European Tree Worker**
AGENTSCHAP NATUUR EN BOS – LEUVEN *Belgium*
Part-time education in Visual Tree Assessment (VTA), tree climbing, felling and pruning. Graduated at **European Tree Worker (ETW)** level and European Chainsaw Standard 3.
- 2019 – COVID **(dropped out) MSc Computer Simulations for Science and Engineering**
TU BERLIN *Germany*
Joint master's program in **mathematical modeling**, numerical analysis, computer science, high-performance computing and visualization. **Dropped out** during the 2020 pandemic to work on Pluto.jl full-time.
- 2015 – 2019 **BSc Mathematics**
RADBOD UNIVERSITY NIJMEGEN *The Netherlands*
150 EC in core Mathematics courses (GPA: 9.0/10).
54 EC in Physics courses (GPA: 7.7/10), with a focus on Astronomy and Environmental Science; 13 EC in Computer Science courses (GPA: 8.0/10), although most of my programming skills are self-taught.
My bachelor thesis combined **probability theory** and **algebraic graph theory** with classical **electric power systems modeling** to analyze the effect of **fluctuating renewable energy sources** on failures in Germany's power grid. (grade: 9.0/10)

*Graduated **cum laude** (GPA: 8.9/10) with 220 EC.*
- 2018 **Study exchange**
UNIVERSITÉ PARIS DIDEROT *France*
21 EC in Mathematics courses, **taught in French** (GPA: 9.2/10).
- 2007 – 2015 **Pre-University Education**
JACOB-ROELANDSLYCEUM BOXTEL *The Netherlands*
Followed a technology-oriented program. *Graduated **cum laude**.*

WORK EXPERIENCE

JUN 2020 – PRESENT

Educational Technology Consultant

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

Co-developed the Massive Open Online Course (MOOC) computationalthinking.mit.edu based on Pluto.jl, my newly designed interactive programming environment for Julia.

We use **live code, interactive visualizations and instant auto-grading** to teach scientific computing in a revolutionary new way.

I wrote lecture materials and homeworks in parallel to developing a new programming environment and publishing platform for a bespoke experience.

Our Pluto-based lectures have **2.1 million views** on YouTube.

SEP 2021 – JUN 2022

Interactive Tools Consultant

JULIA COMPUTING, INC.

Using my experience in bridging Julia-JavaScript and Programmer Experience (PX) to create specialized app-building **tools for scientists**, deployed on the cloud.

JAN 2017 – FEB 2019

Teaching assistant (6 courses)

RADBOD UNIVERSITY

Teaching exercise classes and grading homework for **6 different courses** totalling **63 weeks** in Mathematics and Astronomy.

I was the **senior TA** for *Introduction to Mathematics*, taught by Prof N.P. Landsman, where I wrote an exam question, wrote exercise solutions and **gave supplemental lectures**, leading to the **Faculty Award for teaching**.

VOLUNTEERING

FEB 2020 – PRESENT

Open source maintainer

PLUTO.JL ECOSYSTEM

Lead maintainer of a popular free open source project. The Pluto.jl notebook IDE sees **96 hours of active use per hour**.

I also organize weekly public developer calls, meetings and I answer user questions. Collected over \$25.000 in grants, paid out to **7 contributors** and infrastructure.
30 hours per week.

MAY 2024 – PRESENT

Vegetable farmer

TUINDERIJ DE VOLLE GROND UTRECHT

Planting, weeding, harvesting and composting.
8 hours per week.

APRIL 2021

Conference organizer

PLUTOCON 2021

Organized a 2-day online conference, hosting talks from **21 speakers**, along with a live demo site, hosting 29 posters (notebooks). Talks were watched 500-2500 times.

JAN 2016 – AUG 2019

Work group supervisor

CENTER FOR TECHNICAL CREATIVITY OF NIJMEGEN
(Technisch Creatief Centrum Nijmegen)





Helping high school students work on their technology projects during our weekly meetings. I also advised on **IT education for young teenagers**, using technologies like Arduino and Scratch.
7-9 hours per week.

APR 2016 – FEB 2017

Personal language tutor

DUTCH COUNCIL FOR REFUGEES
(Vluchtelingenwerk Nederland)

Weekly meeting with an Eritrean refugee to aid his **linguistic and cultural integration** in The Netherlands.
2 hours per week.

 Helvoirtsestraat 5, Helvoirt (NL)
 +31 6 15141610
 fons@mit.edu
 github.com/fonsp

PROJECTS

These are some of the projects that I have worked on outside of my studies. Everything is **open source** and **open hardware**, available at github.com/fonsp

2020 **/Pluto.jl**

A reactive notebook IDE, based on **metaprogramming and graph theory with a custom frontend**. Our Web-Socket connection and state management that links Julia to JS (Firebase- and immer-inspired) is regarded as the most stable and flexible available in the ecosystem. Most importantly, we are able to hide this complexity from users and provide an **accessible, beginner-friendly** educational environment using our CodeMirror-based frontend.

2018 **/printi**

An open source, public, **RESTful API and web server** that allows anyone to turn a thermal receipt printer into a web-enabled (IoT) photo printer. I **reverse engineered** a printer driver; the custom driver is **faster than the factory default**. Written in C#, Python, JS and C.

2016 **/resim**

A real-time, interactive **simulation of various relativistic effects** (e.g. Doppler, light aberration, time dilation and a software event horizon). Produced visuals **similar to software by MIT**. Written in C# with OpenGL.

2015 **/eisinga**

A handheld device that identifies star constellations using accelerometer/magnetometer readings. To this end, I **designed, printed and assembled a PCB**. Designed in EAGLE, written in C++.

LANGUAGE SKILLS

DUTCH Fluent
 ENGLISH Fluent (*IELTS* 7.5/9.0)
 FRENCH Intermediate (B2, *CEFR* 2018)
 GERMAN Intermediate

SOFTWARE SKILLS

| | |
|-----------------|---|
| EXPERT | Julia, JavaScript |
| PROFICIENT | React, immer, d3, CodeMirror, TypeScript, GitHub Actions, Python (SciPy), C#, Java, MatLab, R, C++, \LaTeX , Haskell, git, Docker, Adobe Flash, Arduino, EAGLE, CAD, LabVIEW, Bash, ffmpeg |
| BASIC KNOWLEDGE | Clojure, Prolog, PHP, SQL, Lua, NetCDF, CUPS, HTTP, F#, Mathematica |
| WANT TO LEARN | visual programming language design, JavaScript, VS Code extensions, Elm, Svelte, Datalog, Modelica, Simulink, Esterel |

ACHIEVEMENTS

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|------------------------|--|
| #1 STARRED | Julia package (5k GitHub stars), 2021 – present |
| KEYNOTE SPEAKER | at JuliaCon local Eindhoven 2023 |
| COMMUNITY PRIZE | Julia Community Prize, 2021 |
| 155K VIEWS | of my lectures and talks on YouTube |
| #1 WATCHED | talk at JuliaCon 2020 (46k views) |
| INTERVIEWED | for publications on Pluto.jl in LWN.net and Nature, 2020 |
| STUDENT REP. | during restructuring of the first-year curriculum, 2018 |
| FACULTY AWARD | for my supplemental lectures for <i>Introduction to Mathematics</i> , 2017 |
| ≥ 100 SOLVED | Project Euler Problems (algorithm/combinatorial challenges), 2015-present |
| 9 TH PLACE | Dutch Mathematics Olympiad, 2014 |
| 13 TH PLACE | Dutch Physics Olympiad, 2014 |