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Dutch (native), English (fluent)

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Please find an interactive version of this document online at janpaulposma.nl/cv.

Curriculum Vitae: JP Posma

Experienced computer scientist & leader with a broad range of interests. Implementing impactful ideas. Fan of animal slippers and isochrones. I've written production code in **21 languages**, been paid to write code for **18 years**, and once used **25 wine glasses** in a project for MTV.

Professional experience

Zaplib (cofounder / CTO)

2021 – 2022

Zaplib started out as an independent research project, to speed up web applications using **Rust and WebAssembly**. I was then hired back by Cruise to work on it for about half a year, leading a small team of software engineers, working on the open source codebase. I then left Cruise again to **start a company** to commercialize the technology (with Steve Krouse), and we raised funding. We then pretty quickly **invalidated our business thesis** by working with pilot customers, and returned all investment. Learned a lot!
zaplib.com

Zipline (software engineer)

2021

I briefly worked at **Zipline**, before I left to work on Zaplib. I worked on geospatial tooling, visualizations, and on simulations.
zipline.com

Cruise (tech lead / staff software engineer)

2018 – 2020

At **Cruise** (self-driving car company) I was the tech lead on **Webviz**, an open source tool for visualizing what robots are "seeing" and "thinking". We pushed the browser to its limits with WebGL, manual memory management, WebAssembly (C++), streaming in gigabytes of data, etc. Webviz quickly became the **most used internal tool** within the company, and other companies and academic projects started using it as well. The technology was later spun off into a startup; **Foxglove**. I also briefly worked on behaviour/manoeuvre planning (in the robotics group), and I helped set standards for technical interviews across the company.
getcruise.com, webviz.io, foxglove.com

Remix (tech lead + eng manager)

2016 – 2018

At **Remix** we built tools for designing public transportation, to help cities better serve their citizens. I mostly worked on the **scheduling product**, the company's second product. I ended up in a **tech lead and engineering manager dual-role**. I worked on every part of the product, including the data architecture, constraint satisfaction algorithms (e.g. integer linear programming), developer tools, user interfaces, external integrations, and so on.
remix.com

Brigade (senior software engineer)

2015 – 2016

We tried to **tackle** the problem of declining **citizen power and engagement in American democracy**, by building tools for expressing your civic identity, learning about your friends and neighbours, and working toward common goals together.

I worked on the web application, where I mainly focused on features for **customer growth**; several of my proposals and implementations significantly increased our rate of acquisition. I introduced **engineering practices** that keep the complexity of our application contained, and I created a system for managing, visualising, and testing **analytics events** and **experiments**. Sometimes my work resulted in open source projects, such as a **polyfill for delayed scroll restoration**.
brigade.com, github.com/brigade/delayed-scroll-restoration-polyfill

Versal (senior software engineer)

2013 – 2015

I worked on the **core product**: an **authoring tool for interactive courses**, built from the belief that we are vastly underutilising the computer's potential in education. Based on lessons learned, I co-authored a new API for "gadgets" — building blocks of courses, such as videos, quizzes, simulations, games, and so on. We launched our development platform with this new API, and it was well received by gadget developers (much of the API has been **released as open source**). I also **mentored** several junior engineers, spoke at **industry events**, and advised on **systems architecture and product design**.
versal.com, github.com/Versal

Factlink (software engineer) 2012 – 2014

We built an **open source tool** for **curbing misinformation** on the web. I worked on getting traction and applying good engineering practices. We did not manage to get substantial traction, but applied the lessons learned to a spin-off company, **HackerOne**, which was funded by Benchmark Capital for $9 million in May 2014. In 2015 I adapted some of the code for the open source project **Annotator.js**.

https://github.com/Factlink, hackerone.com

Wikimedia Foundation (software engineer) 2011

I worked in the **features team**, developing new tools for **Wikipedia** and other sites running **MediaWiki**. I mainly worked on **WikiLove**, a feature that got major **media coverage**. I was also involved in the discussion about building a new parser, a **major project** which enabled developers to build a full visual editor.

wikimediafoundation.org, wikipedia.org, mediawiki.org, http://news.google.com/?q=wikilove, http://www.mediawiki.org/wiki/Future

University of Groningen (teaching assistant) 2010 – 2011

As a teaching assistant for **Computing Science**, I taught practical sessions, wrote teaching materials, and reviewed and graded submitted work.

rug.nl

WorldTicketShop (software engineer) 2009 – 2010

I was one of the first hires to work on the new **marketplace**. Although working only part-time for most of the time, I built large parts of the **critical infrastructure** of the site, made sure the **transition** between the old and the new site went well, did some of the dynamic parts of the **front-end** and was in charge of the **performance**.

worldticketshop.com

Cantouch (multitouch engineering intern) summer of 2009

I worked on a large **multi-touch table** that supported many touches at the same time, allowing for multi-user interactions. I built two **promotional applications** for Technische Unie, a Dutch wholesale business.

youtu.be/3163Llr5qBs

Triati (cofounder / CTO) 2008 – 2009

I started **Triati** with a friend. We built a few different products, such as a SaaS app to monitor **performance of websites** in search engines, and a CMS for **small communities** such as sport clubs. Ultimately I decided to focus on my studies, but some of the things we built kept serving customers for more than a decade.

triati.com

Aerotronic (software engineer) 2006 – 2007

I worked on the Aerotronic **webshop**, which primarily sells remote-controlled helicopters. I improved the user experience and developed new modules.

aerotronic.nl

References supplied upon request.

Education

MSc in Computer Science, University of Oxford 2011 – 2012

I studied and lived at **St Hugh's College**, where I was a committee member for the **Middle Common Room**. My final project was **JavaScript dares**, an **interactive online programming course** aimed at high school students, for which the thesis can be found **online**. It included an interactive **time-travel debugger**, which I later presented at conferences (e.g. Strange Loop).

ox.ac.uk, mcr.st-hughs.ox.ac.uk, jsdares.com, janpaulposma.nl/visualising-program-execution

BSc in Computing Science (cum laude), University of Groningen 2008 – 2011

I completed the **Computing Science bachelor** with distinction, **cum laude**. It included a 6-month minor in **Mathematics**. I also did committee work for **Cover** and **FMF**, two student associations.

For my bachelor thesis I researched new ways of **editing wikis** such as **Wikipedia**. In October 2010 I presented preliminary results at the MediaWiki Hack-A-Ton in Washington D.C. on invitation of the **Wikimedia Foundation**. In 2011 development continued in close collaboration with developers of **GRNET**, a Greek research institute. The final thesis received a mark of **9.5** (out of 10), and can be found **online**.

rug.nl, svcover.nl, fmf.nl, wikipedia.org, wikimediafoundation.org, grnet.gr, http://commons.wikimedia.org/wiki/File:In-line_Editing_thesis.pdf

Willem Lodewijk Gymnasium, Groningen 2002 – 2008

I followed the track **Nature and Technology**, which focuses on exact sciences. Besides the main courses and the courses from this track, I studied **economics** and **ancient Greek**. My graduation project was **PimpMyBike**, an electronic circuit placed in the wheel of a bike, which displays an image when driving. I did everything from the circuit board design, component selection, and assembly, to the software (embedded+desktop). Finally, I maintained the school's **website**.

wlg.nl, janpaulposma.nl/pimpmybike-biking-at-night-with-style

Experience, prizes, and awards

Sabbatical 2022 – now

I am taking some time off before jumping into the next project. II've been working on various projects. 1. **SSH Now** is a tool for more easily accessing remote machines. 2. I've been doing research into software tools for hardware engineers, especially mechanical engineers. 3. I've been playing with physical computing (an extension of my work on Paper Programs).
ssh-now.com

Independent security research 2020

In my spare time I've been doing some security research: bug bounties as well as puzzles. I ranked #1 on the **HackerOne CTF** leaderboard for 2020.
hackerone.com

Paper Programs 2018

Inspired by **Dynamicland**, a physical computing lab, I built **Paper Programs**, an open source programming environment where **physical pieces of paper** run computer programs. A camera detects and retrieves the program associated with each paper. I built this in two weeks, using React, OpenCV (C++ compiled to WebAssembly), Web Workers, and CSS transformation matrices.
dynamicland.org, paperprograms.org

Vocal Minority 2017

Some of my friends founded a **donation pool**, for which I implemented a redesigned website.
vocalminority.us

Vote16SF 2015

With Jared Shay and the Vote16SF teenagers
For the Generation Citizen Civic Tech Challenge 2015 a fellow programmer and I teamed up with a group that advocates for a lower voting age. In one day we put together a website that tells San Francisco voters why lowering the voting age is a good idea, and concrete steps they can take to help. Our team won the competition's **Civic Alignment Prize**.

λ Lessons 2014

With Steve Krouse
In this hackathon hosted by Y Combinator we created **λ Lessons**, an **open source Haskell course**. For this we implemented a **custom Haskell parser** and **interactive visualisation** of functional expansion and reduction. Our work generated significant interest in the web development and functional programming community — even a spin-off was made, the very entertaining **λ Bubble Pop**.
stevekrouse.github.io/hs.js, chrisuehlinger.com/LambdaBubblePop

Vriendenpolitiek 2012

In the run up to the Dutch national elections I built an **interactive website** that shows exactly how much the **different parties agree with each other** when voting on bills. This application led to an invitation to the first **hackathon** ever to be held in a House of Representatives.
janpaulposma.nl/vriendenpolitiek, appsvoordemocratie.nl

Fronteers conference (volunteer) 2009, 2012

I volunteered in organizing the **Fronteers conference** about front-end web development.
fronteers.nl/congres

Varsity Coding Contest 2011

In this programming competition I secured the **5th place** within Oxford University.

Apps for Noord-Holland 2011

For this **open data competition** I built a **website** with practical information about open swimming water, such facilities, health warnings, and so on. It won the **golden prize** in the category Tourism and Culture.
janpaulposma.nl/zwemmeninnoordholland

Huygens Scholarship 2011

The **Huygens Scholarship Programme** awarded me a full scholarship to finance my studies in **Oxford**.

Science Center North (volunteer) 2008 – 2011

As an unpaid volunteer, I worked at **SCN** with children (age 10–18) on **electronics** and **programming** projects. I taught about soldering, (embedded) programming, and the drawing of schematics and circuit boards. I also developed a set of example projects. We built **oscilloscope games**, **robots**, **aquarium discos**, and **alarm clocks** that played the Super Mario and Tetris themes.
stichting-scn.nl

IKEA (engineering manager for student development project) 2010

I participated in an **international software engineering project**, coordinated by the university, to develop an internal webapplication for **IKEA**. This was done in cooperation with students from the **Linnaeus University** in Växjö. I was the **engineering manager** of a team of 11 students.
ikea.com, lnu.se

IWI programming contest 2009, 2010

With Roan Kattouw

In this university contest we secured the **1st place** as a junior team in 2009.

With Roan Kattouw and Herbert Kruitbosch

In 2010 we competed in the senior league, and got the **2nd place**.

Audivididici 2007 – 2009

With Simon Roosjen

In high school I developed a program for **learning languages** by adding pictures and sound, a method rooted in pedagogical theory. I developed this with my classical languages teacher, who used it successfully in class using (collaborative) exercises. We were awarded funding from **Kennisnet Grassroots**.

audivididici.nl, grassroots.nl

Benelux Algorithm Programming Contest 2009

With Roan Kattouw and Herbert Kruitbosch

In this national contest we secured the **10th place** nationally, and the **1st place** within our university.

Young Talent award 2009

The Royal Holland Society of Sciences and Humanities awarded me a **Young Talent** award.

National Informatics Olympiad 2007 – 2008

This competition is aimed at solving algorithmic problems and implementing them. In the national rounds I secured a **5th** and a **7th** place.

RoboChallenge Junior 2006 – 2007

With Marc van Beest

The aim of this national competition was to build a robot that is able to navigate on a grid and perform certain tasks. Our robot won the **1st place** in 2006, and the **3rd place** in 2007.

Various open source projects

I developed parts of **usbpicprog**, an open source, open hardware project, consisting of a **hardware device** and a piece of **cross-platform C++ software**.

I started **OpenLaserFrag**, an open source, open hardware **laser-tag game**, for which I built the hardware and embedded software.

I wrote the initial Sublime Text port of **import-js**, a tool for making working with Javascript dependencies easier.

On my **GitHub** page there are some more projects I started or contributed to.

usbpicprog.org, openlaserfrag.org, github.com/janpaul123

For more information on my **personal interests**, please visit my website: **janpaulposma.nl**.