

Official name

Jan Pavle Posma

Languages

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Curriculum Vitae: Jan Paul Posma

Computer scientist with a broad range of interests. Current focus: **public transport**. I've written production code in **15 languages**, taught programming and engineering for **8 years**, improved **250+** cities, made **4 legacy code bases** maintainable again, been paid to write code for **14 years**, and once used **25 wine glasses** in a project for MTV.

Professional experience

Cruise (staff software engineer)

2018 – present

At **Cruise** I work on internal tools for visualizing what the autonomous vehicles are “seeing” and “thinking”. As a **staff engineer** I'm responsible for much of the design and architecture of our software, as well managing knowledge of systems and best practices within the organisation.

Remix (tech lead + eng manager)

2016 – 2018

I've mostly worked on the **scheduling product**, the company's second product. I started prototyping UIs as a frontend engineer, and ended up in a **tech lead and engineering manager dual-role**. I've worked on every part of the product, including the data architecture, user interfaces, constraint satisfaction algorithms, developer tools, external integrations, and so on.

Brigade (senior software engineer)

2015 – 2016

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**.

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**).

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. In 2015 I adapted some of the code for the open source project **Annotator.js**.

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**.

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**.

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.

Education

MSc in Computer Science, University of Oxford

2011 – 2012

My final project was **JavaScript dares**, an **interactive online programming course** aimed at high school students. It featured a carefully crafted set of **puzzles** based on the LOGO turtle and Karel the Robot, and a custom subset implementation of Javascript called **js--** to make **time-travel debugging and visualisation of execution** possible.

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

2008 – 2011

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 government-funded research institute. We presented this work at a gathering in Berlin in May 2011. The final thesis received a mark of **9.5** (out of 10).

My graduation project was **PimpMyBike**, an electronic circuit placed in the wheel of a bike, which displays an image when driving.

Experience, prizes, and awards

Paper Programs

2018

Inspired by Dynamicland, a lab researching physical computing, 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 (compiled to WebAssembly), Web Workers, and CSS transformation matrices.

Vocal Minority

2017

In the wake of the 2016 US presidential election, some of my friends founded a **donation pool**, for which I implemented a redesigned website.

Vote16SF *(With Jared Shay and the Vote16SF teenagers)*

2015

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**.

Visualising Program Execution

2015

Based on my work on **jsdares** and research into debugging tools, I developed prototypes for new ways of **gathering and visualising execution traces** of programs. I presented my findings at a few conferences: ForwardJS, OSCON, and Strange Loop. After that, I released the **final prototype**, which I actually used in our production codebase at Brigade.

λ Lessons *(With Steve Krouse)*

2014

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**.

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. We built **oscilloscope games**, **robots**, **aquarium discos**, and **alarm clocks** that played the Super Mario and Tetris themes.

Audivididici *(With Simon Roosjen)*

2007 – 2009

I developed a program for **learning languages** by adding pictures and sound, a method rooted in pedagogical theory. We were awarded funding from **Kennisnet Grassroots**. There is still a group of teachers who actively use our tool in class.

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 founded **OpenLaserFrag**, an open source, open hardware **laser-tag game**. I built the original hardware and software, which is now being built on without my involvement.

Other activities include **photography**, playing the **piano**, and the occasional **skiing** and **sailing**. I enjoy building **interesting things**, such as a **computer in a briefcase**, **balloon molecules**, **self-enumerating pangrams**, or a **voice-controlled apartment**. For more information on my personal interests, please visit my website: janpaulposma.nl.