Jan Špaček

I am Jan Špaček. I have worked on software projects including:

- High-performance distributed systems
- Deep learning
- Embedded devices
- Web apps
- Desktop apps
- Physically-based renderer
- Programming language
- Mobile app

Work experience

Ullmanna (remote/Opava, 2020-present)
Software for a robotic weeding machine (agriculture).
State-of-art recognition of plants in real time with machine learning.
Novel algorithm for visual odometry with stereo vision.
Telemetry, remote update, data collection.
Tablet app for the end user.
Participated in electronics design and development.
Rust (async), C++, CUDA, Python, PyTorch, Android with Kotlin, KiCad, Buildroot

Kiwi.com (remote, 2020-2021)
Maintenance of legacy distributed search services (part of a team).
Introducing Rust into smaller services.
C++, Python, Rust (all async)

Quantlane (Prague, 2019)
Development and maintenance of a legacy trading system (part of a team).
Python with asyncio, RabbitMQ

Corona Renderer (remote, 2017–2019)
Integration of Corona Renderer into ARCHICAD.
Bachelor thesis supervised by Jaroslav Křivánek, defended in 2018.
C++ for Windows, using ARCHICAD APIs and Corona API

Kiwi.com (remote, 2016, 2017)
Distributed in-memory database with low latency and high throughput for storing flight combinations.
Distributed engine for precomputing flight combinations (part of a team, major contribution).
Distributed system for bulk reading of flights from Cassandra.
C++, Python with asyncio, using Cassandra, Redis, PostgreSQL, docker

Bileto (remote, 2015)
Engine for real-time routing in public transport networks (part of a team).
C++, using Redis and PostgreSQL

Adash (remote/Ostrava, 2014–2015)
An application to visualize measured vibrations of industrial machinery.
Design of efficient digital filters accelerated using advanced features of ARM processors.
C++, wxWidgets.

Selected projects

SkyGAN (2019–2020)
Generating high-resolution skydome images with deep generative adversarial networks (GAN).
Master thesis supervised by David Futschik and Alexander Wilkie.
Python with PyTorch

Dancerank.cz (2016–present)
A large database of dance sport results and competitions from several countries.
Analysis of results, ranking of couples, public API, ...
Predictions using a novel machine learning model.
Custom search engine in C++
Python with asyncio, using MongoDB and Redis

dort (2016–2017)
A physically based renderer heavily influenced by the pbrt book.
C++, Lua

spiral (2015)
Implementation of a programming language: compiler, runtime support library with garbage collection, standard library.
C++, Rust, x86 assembler, Spiral.

...and a large amount of smaller projects, a few of them are on my GitHub @honzasp.

Skills

I am not limited to any particular language, platform or environment. I am most experienced in C++, Python and Rust, but I also wrote Kotlin, Haskell, C#, Ruby, Lua, JavaScript, Clojure, Ocaml, Go, Java, my own language Spiral, ...

I have a master's degree in computer science from Matfyz (2015-2020).

Beside work, I danced Latin on a competition level (with my partner we have the highest national class "A"). I am also an avid reader in English and Czech.

Contacts

Web: https://honzasp.github.io
GitHub: @honzasp
LinkedIn: Jan Špaček