Jonatan Kłosko

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About

An open source developer living in Poland, working at Dashbit, member of the WCA Software Team, also a speedcuber.

Public education

2018 – 2022

AGH University of Science and Technology, Kraków, Poland

BS in Computer Science

Faculty of Computer Science, Electronics and Telecommunications

Thesis: "A platform for testing multi-population evolutionary algorithms using the BEAM virtual machine"

Work experience

2021 - Present

Dashbit, Software Engineer

Dashbit is a company with the goal of advancing the Elixir ecosystem through continuous adoption and sustainable open source development. In this spirit, my work has been focused entirely on open source projects related to the Elixir ecosystem, most notably Livebook. An essential part of the job is collaboration with the team, open source maintainers and other members of the community through discussions and code reviews.

2016 - Present

World Cube Association, Software Team member

The WCA is a nonprofit organization governing Rubik's Cube competitions, running thanks to numerous volunteers. As one of such, throughout the years I have been working on several software projects affecting the community worldwide. Being on the team has been a great opportunity to collaborate and exchange experience with other developers. Apart from purely technical tasks, the job also involves communicating with other (often non-technical) teams providing them with information or discussing their ideas and needs.

Projects

2021 - Present

Livebook

A web application for writing interactive and collaborative code notebooks for Elixir. Livebook focuses on reproducible notebooks with readable source, it supports real-time collaborative editing, code completion, inline documentation and provides interactive components, such as charts, tables and inputs. On top of that, notebooks can be deployed as apps, which enables users to automate workflows and build internal tools. Built with Elixir using Phoenix LiveView.

2022 - Present

Bumblebee

A library providing state-of-the-art neural network models, allowing anyone to download and perform machine learning tasks with few lines of code. The library includes implementation of individual models and streamlines the process of loading pre-trained parameters from Hugging Face Hub. Furthermore, it provides end-to-end pipelines for specific tasks, such as image classification, text generation, speech transcription and many more. Those pipelines can be integrated directly into an Elixir application and run across multiple machines and GPUs. Built with Elixir using the Axon neural network library.

2021

Tree-sitter Elixir

An Elixir grammar definition for the Tree-sitter incremental parsing system. This project is used in production by GitHub for source code highlighting and code navigation.

2021 - Present

Meow

A framework for composing and running multi-population evolutionary algorithms with support for GPU and distributed computing. Evolutionary algorithms are a broad category of biology-inspired numerical methods for solving optimisation problems. The primary motivation behind Meow was applying the tensor computational model to evolutionary algorithms to enable cross-platform hardware acceleration. This project was a part of my bachelor thesis and a subsequent paper publication. Built with Elixir using the Nx tensor library.

2019 - Present

WCA Live

A WCA project created by myself, currently being my main area of responsibility within the team. It is a web application used at official WCA competitions for entering scores, displaying live rankings and performing administrative tasks. It helps to run hundreds of competitions in dozens of countries a year. The application consists of a GraphQL API built in Elixir with a PostgreSQL database behind it and a web client built in React. It automatically scales to multiple instances under heavier traffic and employs Elixir distribution capabilities to transparently use all instances as a single system. All of the infrastructure is expressed using Terraform.

2016 - Present

The WCA website

The first WCA project I got involved in, quickly becoming one of the most involved contributors. The website is the primary source of information about competitions, competitor profiles, records and rankings. It provides many administrative tools necessary for WCA teams to perform their tasks. My activity included building new features, fixing bugs and server outages, code reviews and discussions. Developed mostly using Ruby on Rails and MySQL.

2018

Reconstructions

A web application helping people in writing down their Rubik's Cube solutions. Given a mixed up cube state and the solution moves, it automatically detects and labels the individual steps of which the solve consisted. Built with JavaScript using React.

2018 - Present

Groupifier

A web application aiding organizers in planning a WCA competition. Provided some configuration and the competition schedule it does all the heavy lifting in terms of determining who should do what at every point in time throughout the competition. It is designed to handle complex schedules with many activities happening simultaneously in different places. Built with JavaScript using React.

2017 - Present

WCA Statistics

A build kit for generating rankings based on a public WCA database export. The rankings are generated by a periodic CI build and hosted as static web pages. Built with Ruby and MySQL.

2016

Internationalize

A web application built specifically to help translating the WCA website, it works on plain YAML files, so the usage is more generic. It has been successfully used to translate the website to 28 languages and is continuously utilized for updates. Built with Angular.js, Node and MongoDB.

Talks

2023

ElixirConf Eu

Title: Powerful machine learning at your fingertips

Languages

Native Polish, Advanced English