

Zdenek Hynek

10+ years of experience developing data-driven systems and interfaces for startups, research institutions and creative agencies. Having run his own business for many years, Zdenek focuses on pragmatic and elegant solutions that deliver real business value. He enjoys working in cross-functional teams, fostering collaborative culture, writing documentation and deleting old code.

Experience

PHYSICSX

July 2024 – Present

SENIOR SOFTWARE ENGINEER

- Developing enterprise platform for training custom ML models
- Advances 3D visualisation of scientific data with C++ and WASM
- Collaboration with ML engineers, researchers, simulation engineers and product owners on scoping and shaping the product roadmap

SYNTENSOR

March 2021 – June 2024

FOUNDING PRODUCT ENGINEER

- Owning the full-stack product development of digital-biology platform for analysing inferences of state of the art ML models.
- Strategic road-map creation, planning and prioritisation to align with the company's funding efforts.
- Setting up minimal critical path e2e testing to ensure stability of delivery in a very small team moving fast.
- Managing AWS infrastructure using infrastructure-as-code.
- Rapid prototyping and iteration for user-testing and validation.

OWN LIMITED COMPANY

November 2018 – March 2021

CONTRACT SENIOR FULL-STACK DEVELOPER

Working across different industries, teams and tech stacks to gain exposure to different ways of working. Selected contracts:

- Archax – Full-stack development of a desktop app for a trading exchange.
- Data4Change – Head of development for digital rights products.
- RedSift – Full-stack development of a cybersecurity product.

THE ECONOMIST GROUP/SIGNAL NOISE

February 2016 – November 2018

LEAD FULL-STACK DEVELOPER

- Leading development work and delivering over a dozen ambitious creative-tech agency projects.
- Initial estimation, project management and client communication throughout the delivery.
- Mentoring mid-weight and junior developers and assisting with hiring.
- Promoting collaborative culture both internally and externally by organising lunch and learns and meet-ups.

OXFORD UNIVERSITY

May 2015 – February 2016

CONTRACT RESEARCH ASSISTANT

- Leading development of a chart building and data management tool.
- Optimising dynamic website for peak traffic driven by viral tweets.
- Introducing engineering standards and agile way of working to an expert but non-technical team.

CONTACT

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FRONTEND

- Javascript, Typescript
- React, React Hooks, Redux
- d3.js, SVG, canvas, WebGL
- C++, WASM, EMSCRIPTEN
- Jest, Mocha, Chai, Cypress
- NPM, Webpack, Vite
- CSS, CSS Modules, CSS-IN-JS
- Storybook

BACKEND

- Node.js, Express
- Python, Django
- MySQL, Aurora MySQL, Postgres, Elasticsearch, MongoDB
- Firebase

DEVOPS

- Docker
- CI/CD – Github Actions, Codeship
- AWS
- GCP

DATA SCIENCE

- Basics of Tensorflow.js and PyTorch
- Pandas, Numpy and Scipy

TOOLS

- GIT, shell
- Figma, Adobe CC
- Houdini
- QGIS

LEADERSHIP / STRATEGY

- results-oriented
- effective communication
- accountability
- cross-cultural competency
- adaptability

Selected work

SYNTENSOR

[SYNTENSOR.COM](https://syntensor.com)

React, Redux, d3.js, Canvas, Python, Typescript, Node.js, MySQL, ElasticSearch, AWS, Cypress

A drug discovery platform for analysing inferences of ML model predicting the effect of a drug candidates on human biology.

Key challenges

- Collaborating with bioinformaticians, ML research engineers and product designers on scoping and defining specifications of the platform.
- Leading the full-stack development of the platform.
- Visualising biological pathways.
- Building complex UI allowing for the analysis of millions of data points.
- Designing and building efficient backend ingesting GBs of data.
- Learning functional basics of biology, mathematics for graph machine learning and essentials of distributed computing for AI model infrastructure.

REIMAGINE THE GAME

[INFORMATIONISBEAUTIFULAWARDS.COM/
SHOWCASE/3442-REIMAGINE-THE-GAME](https://informationisbeautifulawards.com/showcase/3442-reimagine-the-game)

React, Redux, d3.js, Canvas, WebGL, Tensorflow.js, Node.js

Award winning data-driven microsite telling a story of FC Bayern matches with thousands of data points captured within key moments in the game.

Key challenges

- Collaborating with audio engineers on designing a bespoke pipeline for 3d audio processing.
- Training a machine learning model for digit recognition in a video.
- Design processes and developing tooling which would enable curation and processing of data during and after the game.
- Developing a large number of flexible visualisations allowing for quick prototyping.
- Ensuring functionality of audio players and WebGL visualisations across all target browsers and devices.

UPROAR TOOLS

[TOOLS.UPROAR.FYI](https://tools.uproar.fyi)

Django, Python, Selenium, Postgres, React, d3.js, AWS

A digital tool to help civil society advocate and lobby for digital rights at the United Nations.

Key challenges

- Designing a ranking algorithm for the best recommendations.
- Collaborating with product designer and human-rights activists on requirements gathering, prototyping and user-testing.
- Scraping, parsing and cleaning data from an obsolete website.
- Implementing performant full-text search over 1000s of documents.

ELECTRIC INSIGHTS

[ELECTRICINSIGHTS.CO.UK](https://electricinsights.co.uk)

React, Redux, d3.js, Mocha, Chai, Express, Node.js, MongoDB

An interactive visualization of the real-time breakdown of the electricity production in the UK.

Key challenges

- Leading the front-end development of high-performant visualisations.
- Extensive unit-testing of the data processing scripts for maximum reliability and robustness.
- Collaborating with backend developer and domain experts on scraping strategies and the design of APIs.
- Long-term maintenance and hot fixes of MongoDB/Express backend.

AWARDS

2018

KANTAR – Information Is Beautiful Awards

January 2014

On Think Tanks – data viz competition

October 13, 2013

THE FWA Mobile SITE OF THE DAY

May 3, 2013

THE FWA SITE OF THE DAY

January 10, 2012

THE FWA SITE OF THE DAY

ACTIVITIES

- Organiser of the Visualising Data London and Creative Coding meetup
- Team lead at Data4Change design sprints
- Instructor of the Introduction to AI workshop

EDUCATION

2017

Data Science Intensive Bootcamp
Springboard

2011

Interactive media
Prague College

2010

Exchange stay
École normale supérieure de Lyon

2007

Exchange stay
University of Arizona

2006 – 2011

MSc in Geoinformatics and
Cartography
Masaryk University

LANGUAGES

CZECH
Native

ENGLISH
Bilingual Proficiency

FRENCH
Limited Working Proficiency

GERMAN
Elementary Proficiency