Pavel Shcherbakov
Data scientist / ML engineer

Data science enthusiast. Currently live in Georgia. I have been working in the field of hydropower for seven years. For the last two years I have been combining the positions of lead research engineer and data scientist at TYZHMASH, a leading company in the production of hydraulic turbine runners. I developed from scratch a software package for calculating hydrodynamic characteristics on the basis of which the optimal blade shape is selected using a genetic algorithm. Several runners were manufactured on the basis of this software package and now they are successfully operating at the world's largest hydroelectric power plants.

Contact

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GitHub
pkshcherbakov

Education

2021
Postgraduate
Federal research center for information and computational technologies

2017
Master of Mathematics (Mathematical modeling)
Novosibirsk State University

2015
Bachelor of Mathematics
Novosibirsk State University

Skills

- Python
- Data science frameworks: pandas, numpy, tensorflow, scikit-learn, pytorch
- SQL
- Computational fluid dynamics
- Web scrapping

Language

English (B2)

Russian (native)

Experience

2015 - present
JSC TYAZHMASH (tyazhmash.com)
Data scientist / Lead research engineer

Worked my way up from an intern to a data scientist / lead research engineer. In my work I use the simplest ML models (Linear models, SVM, splines). I develop software for hydrodynamic calculations of hydroturbines from scratch, using original developments (mathematical models, numerical algorithms etc.). The developed software has been successfully implemented in the production chain and allowed to produce runner blades that are more efficient in terms of cavitatation and energetic characterstics.

2019 - 2022
Novosibirsk state university (nsu.ru)
Lecturer

I was engaged in teaching at NSU at the Faculty of Mechanics and Mathematics and Faculty of Physics. Gave lectures on introduction to mathematical software, mathematical modeling and numerical methods for solving various types of differential equations.

2014 - 2021
Federal research center for information and computational technologies (ict.nsc.ru/en)
Junior researcher

2021 - 2022
Kutateladze institute of thermophysics (itp.nsc.ru)
Researcher

I was engaged in science: wrote scientific papers and participated in conferences. Developed new mathematical models and numerical methods for hydrodynamic calculations. Over the past few years, I have been a speaker at the world's largest conference in the field of turbomachinery IAHR (International association of hydraulic researchers). I wrote a Ph.D. thesis (Numerical simulation of multiphase flows in a hydraulic turbine), which was not defended because I left Russia.
My scientific papers can be found at this link: scopus.com/authid/detail.uri?authorId=57200012828

Additional information

- Married
- Extremely motivated
- Know how to use Google