Mihael Tunik

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https://github.com/mihael-tunik/

About me

Programmer with versatile experience in IT and computer science. I do believe that modern scientific research process requires significant programming skills (and ready to provide them). Seeking a position as a developer-researcher to enhance my career growth.

Education

2013 — 2017 **Bachelor degree**, *Saint-Petersburg*, Peter the Great St.Petersburg Polytechnic University, departament of applied mathematics and mechanics.

2017 — 2019 **Master degree**, *Saint-Petersburg*, Peter the Great St.Petersburg Polytechnic University, departament of applied mathematics and mechanics.

Master thesis

2019 **Special kernel density estimator for finite sample size conditions**.

Work is dedicated to research of theoretical accuracy of statistical kernel density estimator of special type for finite sample size conditions.

Experience: 4 years and 5 months

august 2019 — now **Saint-Petersburg State University, Chebyshev Laboratory**, *engineer-researcher*.

- Team work on developement of statistical instruments for geo-data analysis and seismic inversion. There we extensively used various Gaussian process based regression models and various technics for data-processing. Also I helped with research for relevant scientific articles and automated several research pipelines.

- Development MVP for the tool for fine-tuning advanced hydrodynamic simulations in Dumux with Bayesian optimization techniques. Here I also was responsible for building custom desktop UI (5K codebase from scratch). Among other things as a researcher I took part in implementing experimental software for solving Riemann problems.

- Work with ML-pipelines for classification/recognition timeseries data from sensors of gas-analyzer. Developed window-based approach for classification in combination with classic ML-tools like LDA/QDA or logistic regression.

- Actually during my work I've created even more things: like microservices for convenient remote access to advanced simulator software or gradio dashboard to make research process more convenient.

Skills

Programming: Python [advanced], C/C++ [medium], SQL, R and Javascript [basic];

Mathematics: Statistics and probability theory, linear algebra, calculus.

CS background: Algorithms and numerical methods, statistical data analisys and ML: hypothesis testing, table data classification, linear models.

More information and keywords:

- General purpose skills:
  - Many years of experience with different **Linux** distributions, system configuration, terminal (bash, Unix commands);
  - Proficient with **Git**, managing repositories: pull-requests, **Github Actions** CI, reviews; **Notion** for task-tracking;
  - Remote access via **ssh**, familiar with **Docker** and **docker-compose**;
  - Extensive experience with **Python** toolchain and ecosystem: building up Python packages from scratch with **setuptools**, managing things with **venv** or **Anaconda**;
- Experience as engineer-researcher:
  - Work on project sketches in **Jupyter Notebooks** and **Google Colab**;
  - Proficient with **numpy, pandas, sklearn**; work with GP models via GPflow; botorch, bayes_opt, gradient boosting with **CatBoost**; experience with Torch;
  - Advanced work with **LaTeX** for scientific texts and presentations;
- Some experience from desktop-dev:
  - UI development with **PyQt5**, Qt Creator IDE, PyInstaller for bulding binaries;
  - Experience in writing detailed documentation for code and UI;
- Some experience from web-dev:
  - Some experience from backend: HTTP protocol, Nginx, **Flask**, Django, testing APIs with **Postman**;
  - Basic experience with databases (PostgreSQL, SQLite) and key-value stores;
  - Some experience from frontend: HTML, CSS/SCSS, basic knowledge of Javascript;
- Some experience with C/C++ (parallel computations with OpenMP, make-files and CMake, building small .so libs), linking C++ and Python via **Ctypes**;

Languages

Russian C2, Native speaker

English B2, Upper-Intermediate

Online courses

Stepik October 2022 ***Hadoop. System for big data processing.***

Learned basic things about Hadoop ecosystem, including HDFS and MapReduce.

Result: certificate with distinction, >90% score.

Stepik January 2023 ***Apache Airflow for analysts.***

Learned basic things about Apache Airflow, DAGs and ETL in general.

Result: certificate.