Gleb Lukicov

PhD Candidate in Physics

Portfolio

https://glukicov.github.io

Contact

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London, UK

Programming

`Python`, `C++`, `Cython`, `SQL`, `Bash`, `LaTeX`

Data analysis

Techniques

Fourier transform
Monte Carlo methods
Iterative optimisation

Python tools

`NumPy`, `pandas`, `SciPy`, `Matplotlib`, `seaborn`

Machine Learning

Techniques

Regression
Classification
Neural networks
GPU utilisation

Tools

`scikit-learn`, `TensorFlow`, `Keras`

Software

`Linux`, `PostgreSQL`, `Docker`, `JupyterLab`

Languages

English (native)
Russian (native)
Latvian (intermediate)

Interests

Professional

Education outreach
Technology blogging

Personal

Observational astronomy
Thai kickboxing

GitHub: glukicov
LinkedIn: glukicov
Medium: @lukicov
Twitter: @Gleb_Lukicov

Profile

- Numerate and articulate PhD candidate; proficient in `Python`, `C++`, `SQL`.
- 6+ years of experience in applying advanced statistical methods to large datasets.
- Applied expertise with distributed computing systems: servers, grid, IoT.
- Practical experience with big-data collection, storage, processing, and analysis.
- Proficient in using `scikit-learn` and `TensorFlow` pipelines for a variety of projects.

Experience

2017–2019 **Fermi National Accelerator Laboratory**, *Researcher* *Chicago, USA*

- Developed a *software infrastructure* (`Python`, `C++`, `Fortran`) for data optimisation, improving the data quality by 4% and the yield of data by 3%.
- Derived calibration constants into the production `PostgreSQL` database, which was used for processing of 2 PB of data.
- Led the effort to add extra grid computing resources to the "common pool", and designed tools for data quality monitoring.
- Skimmed 0.5 PB of data into `HDF5` tables for *regression analysis*.
- Supported the data acquisition as an on-call (24/7) computing expert.
- Liaised with engineers and safety officers to ensure a smooth operation of the experiment.

2015 **Paul Scherrer Institute**, *Trainee* *Villigen, Switzerland*

- Prepared 12 TB for storage of data, and set-up a `Linux` analysis cluster.
- Worked as part of a team of hardware and software experts to ensure optimal data collection.

2014 **University College London**, *Research Intern* *London, UK*

- Developed a QR-coded online database for over 300 research devices.
- Produced a software solution for equipment testing with Raspberry Pi.

Projects

2015–2016 **Research Project**

- Developed a hardware solution using an Arduino-controlled servomotor, SiPM and Sr-90 source to test the efficiency of equipment.
- Produced a software model of the developed set-up for verification.

2015 **Group Project**

- Led a group of nine students to successfully build an electrostatic radon detector using a PIN diode and a 7 L steel vessel.
- Chaired monthly meetings and managed the group's budget.

Education

2016–2020 (expected) **PhD** in Experimental Particle Physics **University College London**

Thesis work focused on data optimisation and big-data analysis.
Courses: Statistical Data Analysis, Entrepreneurial Skills, Data Science:

- ML theory and techniques for big-data analysis, cloud computing
- Logistic regression, SVMs, random forests, unsupervised learning

2012–2016 **MSci** in Physics with *First Class Honours* **University College London**

Courses: Scientific Programming, Statistical Physics, Electronics

Qualifications

2019 – Now **Certificate in Advanced Machine Learning** *Coursera*

- Deep learning on Google Colab using TPUs and GPUs
- Bayesian methods for ML, CNN, NLP, reinforcement learning

Awards

2018 **Visiting Scholar Award ($15,000)** *Universities Research Association*

Based on the evaluation of a research and budget plan