

Sergei Volkov

Data analyst/engineer with an academic background in limnology and hydrophysics, passionate about automation. A long-term fan and user of Linux, Vim, and open-source software. I write efficient code to collect data from different sources, load it into databases, analyze, visualize, and create automated reports with Tableau or other BI tools. I can set up and analyze AB tests, check hypotheses, and describe the research to stakeholders. I value reproducibility (in computing and research), keeping information version-controlled, and writing easy-to-read code.

Work experience

Oct 2024 – **Data Engineer, Zalando SE**

March 2025 Software development

- Data pipelines design and development (Airflow + Databricks mostly)
- Stakeholders communication
- CI/CD pipelines design and development (using internal CI/CD tool of Zalando)
- Code review
- Data QA and tech support for stakeholders

Data engineering position in a service team for various internal clients/stakeholders. Building new and editing old DAGs, managing databases/datalake.

Aug 2023 – **Data Scientist, Crocus Labs GmbH**

Feb 2024 Software development, Software architecture, Product design, Project management, Testing, Team leading

- Set up CI/CD and coding conventions
- Created raytracing application to calculated LED layout based on the LED chip ray data
- Designed AWS architecture for IoT, web app, service DB, and ETL
- Developed various Python and Bash scripts
- Created IoT showcase with virtual clients in Python and MQTT broker in separate Docker containers

I was hired to build an ETL for collecting data from smart lamps for greenhouses. However, upon my arrival, a complete redesign of the AWS architecture was necessary, which I made but eventually it was canceled. My employment ended when the company decided to switch to a self-hosted solution from cloud-based.

Jun 2021 – **PhD Student, Leibniz-Institut für Gewässerökologie und Binnenfischerei (IGB Berlin)**

Mar 2023 Research design, Data processing, Fieldwork, DevOps, Academic writing and editing

- Analyzed various data, conducted research, and published papers
- Created complex environments for the MATLAB package (OpenCV and mexopencv built with CMake in Docker, GUI on host machine with remote X session)
- Developed Python computer vision programs and ad-hoc data wrangling frameworks
- Organized fieldwork and participated in lab work
- Administered remote Linux servers

Focused on the hydrophysical aspect of a joint limnological project, with an emphasis on biomass sinking, degradation, and the carbon cycle.

- Oct 2020 – **Data Quality Engineer, Playrix**
 Feb 2023 Data analysis, Validation, ETL design, Manual and automated QA
- Wrote complex SQL (various dialects) queries and scripts in Python and PySpark
 - Worked with Big Data
 - Developed automated data quality evaluation methods
 - Implemented several BI algorithms in SQL and Python
 - Designed methods for creating ad-hoc data validation SQL queries with metaprogramming
 - Managed QA section of the project and led QA team
 - Designed and verified BI dashboards
- Hired by the data engineering team to check the legacy ETL data and conduct data quality control during migration to a new ETL. Later, responsibilities included developing Tableau dashboards and their sources, and consulting developers on calculating different metrics.*
- Mar 2020 – **QA Engineer, Playrix**
 Oct 2020 Manual QA, Automation, Teaching, Testing documentation writing, MitM traffic sniffing, Statistical analysis
- Mocked package loss and network random latency by proxying traffic on a Linux host
 - Data-driven checking of random-based algorithms
 - Developed a Python script for TestRail API
- Nov 2019 – **Data Analyst, Playrix**
 Feb 2020 Data analysis, Automation, User tracking events design, Reporting and presenting to stakeholders, AB tests
SQL, Python, Analytics, DataViz, Big Data
- May 2016 – **Teaching Assistant, Petrozavodsk State University**
 Jul 2020 Educational program design, Lecturing, Teaching
Thermodynamics, Heat transfer, and other courses
- Jan 2016 – **Research Assistant, Northern Water Problems Institute**
 now Data analysis, Fieldwork, Experiment design, Data processing frameworks development, Academic writing, editing, and typesetting

Technical Skills

- Development *Python*: NumPy, Pandas, Matplotlib, Plotly
SQL: Analytic/window functions, query optimization
Data: Spark, Airflow, Databricks, Snowflake, dbt, Tableau, Looker, Plotly Dash, Spreadsheets
NoSQL: DynamoDB, MongoDB
Linux: Bash, system management, SSH, Nix
Containers: Docker/Podman, systemd-nspawn, Kubernetes
IaC: Terraform, Nix
General: Git, Vim, Emacs, Jupyter
CI/CD: GitHub Actions, TeamCity, GitLab
Cloud: AWS, GCP
Typesetting: Markdown, LaTeX, Pandoc
Other: Julia, MATLAB
- Analytical AB test design and analysis
 Cohort analysis
 Time-series analysis
 Descriptive and inferential statistics
 Machine learning basics

Data wrangling
Research *Fieldwork*: Organizing, sampling, working with probes, logistics, hand and power tools
Writing: Academic writing, editing, publishing, proofreading
Data processing: Writing ad-hoc frameworks, automation, visualization

Communication skills

- Presenting
- Communicating with stakeholders
- Public speaking
- Teaching/Mentoring
- Feedback sharing
- Active listening
- Remote team building

Organisational / managerial skills

- Agile, Kanban, Scrum
- Managing small teams of developers
- Task management and distribution
- Project management

Projects

- 2015 – 2017 **Lake Onego: Life Under the Ice, NWPI**
Research and fieldwork
Joint interdisciplinary project to study the under-ice life
- 2021 – 2023 **Lake Pycnoclines Trap Organic Particles Forming Hot Spots of Accelerated Carbon Cycling in the Water Column (PycnoTrap), IGB Berlin**
Joint interdisciplinary project researching sinking and degradation of biomass in the turbulent environment (lake water column)

Awards - Certifications - Licenses

- 2017 **Machine Learning**, Stanford University on Coursera
Certificate available at <https://www.coursera.org/account/accomplishments/verify/U4VGJWXFGMS9>

Voluntary

- 2013 – 2015 **Garbage Collection**, On multiple sites near Onego Lake, Petrozavodsk, Russia
2011 – now **OpenStreetMap**, Data surveys and contribution, Republic of Karelia, Russia

Education

- 2010 – 2015 **Specialist Degree in Energy Supplies**, Petrozavodsk State University

Thesis

- 2015 **Noniterative Heat Exchanger Calculation**
Supervisor: Professor Sergei Bogdanov
The thesis proposes a direct analytical calculation procedure for heat exchanger design, avoiding the use of optimization algorithms

Personal

Citizenship **Russian**
Languages **Mother tongue: Russian**
English: C1/C2
German: B2
Driving license **European Driving License: B, C**

Publications

- 2021 **Full Reynolds Stress Tensor of Convective Turbulence Estimated with Paired Acoustic Doppler Current Profilers**, *S. Bogdanov, G. Kirillin, S. Volkov, G. Zdrovennova*
DOI:10.1002/essoar.10507975.1
- 2019 **Fine scale structure of convective mixed layer in ice-covered lake**, *S. Volkov, S. Bogdanov, R. Zdrovennov, G. Zdrovennova, A. Terzhevik, N. Palshin, D. Bouffard, G. Kirillin*
DOI:10.1007/s10652-018-9652-2
- 2019 **Under-ice convection dynamics in a boreal lake**, *D. Bouffard, G. Zdrovennova, S. Bogdanov, T. Efremova, S. Lavanchy, N. Palshin, A. Terzhevik, L. Vinnå, S. Volkov, A. Wüest, R. Zdrovennov, H. Ulloa*
DOI:10.1080/20442041.2018.1533356
- 2019 **Structure and dynamics of convective mixing in Lake Onego under ice-covered conditions**, *S. Bogdanov, G. Zdrovennova, S. Volkov, R. Zdrovennov, N. Palshin, T. Efremova, A. Terzhevik, D. Bouffard*
DOI:10.1080/20442041.2018.1551655
- 2018 **Albedo of a Small Ice-Covered Boreal Lake: Daily, Meso-Scale and Interannual Variability on the Background of Regional Climate**, *G. Zdrovennova, N. Palshin, T. Efremova, R. Zdrovennov, G. Gavrilenko, S. Volkov, S. Bogdanov, A. Terzhevik*
DOI:10.3390/geosciences8060206

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