Roman Sheshka,Mr

Research Engineer (PhD), Data Scientist and AI developer

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SUMMARY

Data Scientist and project manager with a strong background in fundamental sciences, PhD in applied mathematics, and with extensive experience in software industry. I am seeking opportunities to apply my advanced analytical skills, my knowledge in machine learning (ML), deep learning (DL) and my understanding of mathematical modeling as well as my managerial skills in a challenging and dynamic environment.

EDUCATION

AI and Data Science: AI developer, Le Wagon, France 10/2023 - 12/2023

9-week full-time intensive coding bootcamp: Statistics with SciPy, Statsmodels; Machine Learning with Scikit-learn; Deep Learning with TensorFlow; Develop Data Products with Google Cloud Platform, ML Flow, and Streamlit.

PhD in Applied Mathematics, Ecole Polytechnique, France 2008 - 20012

Worked on mathematical data-driven modeling of molecular motors, theory of stochastic process, information theory, theory of cellular motors and brownian motors, stochastic thermodynamics.

Master of Science, Université Paris-Saclay, France 2006 - 2008

Majors: Physics of liquids

Bachelor of Science, Université Clermont Auvergne, France 2003 - 2006

Majors: Physics and Engineering

WORK EXPERIENCE

Data Scientist, AKO-AI, Station F 04/2024 - 08/2024

AI models in fashion industry : probabilistic models for prediction of sales and items stock optimization

- Set-up and data (time-series) preprocessing, data-analysis, data-visualization using Pandas, Matplotlib, Seaborn and Plotly.
- Time-series forecasting using statistical models and ML (XGBoost, LightGBM) models. Pipeline implementing using NIXTLA library
- Research and optimization of scoring and metrics functions
- Research of probabilistic models using complex approach: pure statistical modeling with DL optimization (PyTorch). Object oriented programming in Python of full pipeline, code packaging, code optiimization for cloud computing (CPU and GPU) and AWS Data Lakehouse.
- Model pushed in production

Data Scientist and Freelance Developer 2023 - 2024

- Backend data warehouse Python pipeline development and optimization. Set-up and preparation of structured data model (Postgre SQL), data integration and front-end data delivery using Pandas and Dask. Benchmark tests implementation.
- Translated MATLAB/C++ image data processing pipeline into Python/C++ portable code. Code performance optimization

Research Engineer (Postdoctoral Researcher), Institut Curie, Université de Paris 2021 - 2023

Worked with 18-months research project related to the study of mechanical events in Drosophila dorsal epithelium during morphogenesis in multidisciplinary team

- Implemented image processing and data analysis pipeline in Python (Numpy, JAX) using tensor computation
- Research of data-driven mathematical model exploring mechanical and genetical data
- Research and development of Deep Learning algorithm (PyTorch, neural operators, PINN) applied to inverse problems in mechanics
- Research and developement of model of system of coupled brownian motors, object oriented Python and C++ pipeline, two optimized versions for CPU and GPU.
- Presentation of research results, Microsoft 365 and LaTeX
- Results: two papers in preparation

Product Owner and Project Manager. International Digital Art Market 09/2021 - 05/2022

Worked on web-application development based on blockchain technology aiming to sell non-visual arts

- Project management working in international team of 5 employees, France and Germany, applying methodology Agile.
- Supervision of mathematical modeling for a DAO project and blockchain services on Ethereum. Oversight of fully Cloud-oriented implementation.
- Oversight of custom cryptocurrency development and associated DeFi services for digital art market
- Results: led the launch of a new software in just 6 months

Implementation Consultant. NeoXam, France

2016 - 2021

- Set-up of Data Hub solution for the client specific use. Set-up of structured data bases, SQL and JAVA
- Business analysis of client cases. Design of financial products and financial instruments models in the Data Hub software
- Data provider connectors workflow implementation, internal software user workflow implementation
- Writing of technical documentations and presentation of technical solutions
- Working with cloud web-applications using Google Cloud, Google Firebase, VueJS and Python.
- Project management using methodology Agile (JIRA, Microsoft 365)
- Results: successful missions and satisfied clients BNP Paribas, Amundi AM, AXA IM, Dexia, Nomura, Banque de France

Research Engineer (Postdoctoral Researcher), CEA, Grenoble

2013 - 2015

Participated in 18 months research project on innovative thermoelectric materials for industry

- Numerical simulations: modelling of thermoelectric properties of new semiconductor materials using ab-initio and Mont-Carlo simulations (Fortran and Python)
- Research and developement of higth performance stochastic algorithms for distributed computations on large clusters (FORTRAN and Python)
- Report of technical results (LaTeX)
- Results: co-authored publication in Nature Communications

Research Engineer, LMS, Ecole Polytechnique, Palaiseau

2008 - 2012

Worked on four years project aiming to provide mathematical modelling of muscle contraction mechanics in multidisciplinary team

- Development of multiscale stochastic numerical simulations algorithms and Monte-Carlo simulations in MATLAB and Wolfram Mathematica
- Teaching and supervision of research trainees
- Collaborated with teams across Europe
- Results: two papers on the theory of stochastic processes and non-equilibrium thermodynamics

SKILLS

MANAGEMENT	Agile methodology, team and project management, business analysis, presentation and storytelling
SOFT SKILLS	adaptability and flexibility, active listening, handling high-pressure situations, self-learning
PROGRAMMING	Python (including NIXTLA, TensorFlow, JAX, PyTorch, Scikit-Learn, Pandas and Dask), C++, FORTRAN, MATLAB, Wolfram Mathematica, Git, Linux (Ubuntu, Fedora), Mac OS, Microsoft Windows, Cloud GPU, developing skills in NLP and LLM agents
SOFTWARE	LaTeX, Microsoft 365, VSCode, Adobe Illustrator, Adobe Express, Gimp, JIRA

OTHER INFORMATION

LANGUAGES: fluent in English, French, Belarusian and Russian, learning German and Chinese

EU national (France)

PUBLICATIONS

R. Sheshka and L. Truskinovsky. Power-stroke-driven muscle contraction. The Mathematics of Mechanobiology. Lecture Notes in Mathematics, vol 2260, 2020
https://doi.org/10.1007/978-3-030-45197-4_4

R. Sheshka, P. Recho and L. Truskinovsky. Pseudo energy wells in active system. arXiv: 1509.02753
http://arxiv.org/abs/1509.02753

R. Sheshka, P. Recho and L. Truskinovsky. Rigidity generation by nonthermal fluctuations. Phys. Rev. E. 93 (052604) 2016
https://journals.aps.org/pre/abstract/10.1103/PhysRevE.93.052604

X. Chen et al. Twisting phonons in complex crystals with quasi-one-dimensional sub-structures. Nat. Commun. 6 (6723) 2015
http://www.nature.com/ncomms/2015/150415/ncomms7723/abs/ncomms7723.html

R. Sheshka and L. Truskinovsky. Power stroke driven acto-myosin contractility. Phys. Rev. E. 89 (1) 012708, 2014
http://journals.aps.org/pre/abstract/10.1103/PhysRevE.89.012708