Oleg Ovcharenko

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INTERESTS

Geophysics & Machine Learning

Seismic wave simulation, Machine Learning, Full-Waveform Inversion, Natural Stress State Reconstruction, HPC

EDUCATION

King Abdullah University of Science and Technologies, Saudi Arabia

PhD student in Computational Geophysics, GPA: 3.67/4.00 2016 - now

Thesis is focused on implementation of Machine Learning techniques to geophysical problems. (Advisor: Professor Daniel Peter)

Paris VII Diderot, **Institut de Physique du Globe de Paris**, France

M.Sc., Exploration geophysics, GPA: 14.15/20.00 2014 - 2015

Thesis: An accurate finite difference operator for synthetic seismogram calculation for 2D transversely isotropic elastic media with regular meshing. (Advisors: Professor Nobuaki Fuji and Dr. Roland Martin)

Lomonosov Moscow State University, Russia

M.Sc., Physics, GPA: 4.0/5.0 2009 - 2014

Thesis: Analytical solutions for viscous flow in the lithosphere subject to exogenous processes and isostasy. (Advisor: Dr. Yuriy L. Rebetskiy)

LANGUAGES

Russian	Native
English	Fluent
French	Intermediate

PROGRAMMING AND MARKUP

Python, Matlab, C/C++
Tensorflow, Keras, Pandas, PETSc
LaTeX, HTML, CSS

SELECTED COURSEWORK

Computational Geophysics (ErSE390C, Prof. Daniel Peter), **Introduction to HPC** (AMCS312, Prof. David Keyes), **Inverse Problems** (ErSE213, Prof. Ibrahim Hoteit), **Machine Learning** (CS229, Prof. Xiangliang Zhang), Technology **Innovation and Entrepreneurship** (EID210, Prof. Gordon McConnell)

EXPERIENCE

Intern 2017
KAUST Innovation Fund

Engineer 2013 - 2014
Laboratory of Tectonophysics,
The Schmidt Institute of Physics of the Earth of the Russian Academy of Sciences (IPE RAS) (Advisor: Dr. Yuriy L. Rebetskiy, Head of lab.)

Field Experience

Geophysical **field training** in Chambon la Foret with GPX of IPGP — Oct 2014
Seismic data acquisition using industry geophones and software
Final report: Green′s Function Retrieval Using Active Interferometry

Geological-geophysical **expedition** to North Caucasus, IPE RAS — Jun 2013
Collecting rock samples
Measuring tectonophysical features with geological compass

Teaching Experience

Tutor — 2010 - 2016
Physics, math, informatics and chemistry for high-school

Honors and Awards

KAUST-NVIDIA GPU Hackathon 2018, 1st place — 2018
EAGE GeoQuiz, 3rd place worldwide — 2017
KAUST PhD Fellowship, Saudi Arabia — 2016 - 2020
GPX scholarship from IPGP and MINES ParisTech, France — 2014 - 2015

Certificates

Certificate in Entrepreneurship, Cornell Graduate School of Management — 2018
Machine Learning by Andrew Ng — 2017
Microsoft: DAT203.1x Data Science Essentials — 2017

Journal articles

1. Variance-based model interpolation for improved full-waveform inversion in the presence of salt bodies
   O Ovcharenko, V Kazei, D Peter, T Alkhalifah
   GEOPHYSICS — 2018
2. Present stress field of the crust in South-West Europe and Mediterranean Sea
   Rebetskiy, Yu., Ovcharenko, O., Savvichev, P.
   Bulletin of Kamchatka Regional Association ”Educational-Scientific Center”. Earth Sciences, No. 2(24) — 2014.

Conference papers and abstracts

1. Low-frequency data extrapolation using feed-forward ANN — 2018
   O Ovcharenko, V Kazei, D Peter, T Alkhalifah
   80th EAGE Conference and Exhibition 2018
2. Feasibility of moment tensor inversion for a single-well microseismic data using neural network — 2018
   O Ovcharenko, J Akram, D Peter
   GEO 2018 Conference and Exhibition
3. Neural Network Based Low-Frequency Data Extrapolation — 2017
   O Ovcharenko, V Kazei, D Peter, T Alkhalifah
   SEG FWI Workshop, Manama, Bahrain, 2017
4. A robust neural network-based approach for microseismic event detection 2017
   J Akram, O Ovcharenko, D Peter
   SEG Technical Program Expanded Abstracts 2017, 2929-2933
5. Variance-based Salt Body Reconstruction — 2016
   O Ovcharenko, VV Kazei, D Peter, T Alkhalifah
   79th EAGE Conference and Exhibition 2017
6. Simple and accurate operators based on Taylor expansion for 2D elastic seismogram calculation under geological discontinuities with regular Cartesian grids 2016
   N Fuji, O Ovcharenko, R Martin, C Cuvilliez
   78th EAGE Conference and Exhibition 2016-Workshops

References

Available upon request