

Oleg Ovcharenko

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Geophysics & Machine Learning

INTERESTS

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 solution 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

Python, Matlab, C/C++, Fortran
 Tensorflow, Keras, PyTorch, Pandas, PETSc, etc.

SELECTED COURSEWORK

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

WORK EXPERIENCE

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

GeophysicsI **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 Physics, math, informatics and chemistry for high-school	2010 - 2016
HONORS AND AWARDS	KAUST-NVIDIA GPU Hackathon 2018 , winner EAGE GeoQuiz , 3rd place worldwide KAUST PhD Fellowship , Saudi Arabia GPX scholarship for the International Master of Research in Exploration Geophysics at IPGP and MINES ParisTech, France	2018 2017 2016 - 2020 2014 - 2015
CERTIFICATES	Certificate in Entrepreneurship , Cornell Graduate School of Management <i>Online:</i> Machine Learning by Andrew Ng Microsoft: DAT203.1x Data Science Essentials	2018 2017 2017
JOURNAL ARTICLES	1. Variance-based salt body reconstruction for improved full-waveform inversion <u>O Ovcharenko</u> , V Kazei, D Peter, T Alkhalifah <i>Under review for publication in Geophysics</i> 2. Present stress field of the crust in South-West Europe and Mediterranean Sea 2014 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 <u>O Ovcharenko</u> , V Kazei, D Peter, T Alkhalifah 80th EAGE Conference and Exhibition 2018 (<i>pending publishing</i>) 2. Feasibility of moment tensor inversion for a single-well microseismic data using neural network <u>O Ovcharenko</u> , J Akram, D Peter GEO 2018 Conference and Exhibition (<i>pending publishing</i>) 3. Neural Network Based Low-Frequency Data Extrapolation <u>O Ovcharenko</u> , V Kazei, D Peter, T Alkhalifah SEG FWI Workshop, Manama, Bahrain, 2017 (<i>pending publishing</i>) 4. A robust neural network-based approach for microseismic event detection 2017 J Akram, <u>O Ovcharenko</u> , D Peter SEG Technical Program Expanded Abstracts 2017, 2929-2933 5. Variance-based Salt Body Reconstruction <u>O Ovcharenko</u> , 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, <u>O Ovcharenko</u> , R Martin, C Cuvilliez 78th EAGE Conference and Exhibition 2016-Workshops	2018 2018 2017 2016
REFERENCES	<i>Available upon request</i>	