Oleg Ovcharenko

KAUST, PO box 1186, 23955-6900, Thuwal, Saudi Arabia

CONTACTS

+966 53 273 9032 oleg.ovcharenko@kaust.edu.sa github.com/ovcharenkoo

INTERESTS

Geophysics & Machine Learning

Inverse problems, Numerical Modeling, High-Performance Computing, Entrepreneurship

EDUCATION

King Abdullah University of Science and Technologies, Saudi Arabia

PhD Candidate in Computational Geophysics, GPA: 3.61/4.00 2016 - 2020

Research is focused on Machine Learning applications in exploration geophysics such as frequency bandwidth extrapolation for FWI, data-to-model conversion, and source mechanism inversion. (Advisor: Prof. 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: Prof. 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)

WORK EXPERIENCE

Co-founder at MedSeis 2018 - now
- Biotech. Radiation-free dental imaging.
- Awarded 10k$ proof-of-concept funding from the PostUp university program

Intern at KAUST Innovation Fund, Thuwal, Saudi Arabia 2017
- Assisted investment managers to evaluate university-based startups
- Participated in planning of the Arabian Venture Forum

Engineer at department of Tectonophysics, IPE RAS, Moscow, Russia 2013 - 2014
- Reconstructed stress state in the crust of Western Europe using method of Cataclastic Analysis of Discontinuous Displacements
- Published a paper based on this work

PROGRAMMING, OS AND MARKUP

Python, Matlab, C, CUDA C
TensorFlow, Keras, PETSc
LaTeX, HTML, CSS, Git
Mac OS, Unix, Windows

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)

LANGUAGES

Russian Native
English Fluent
French Intermediate
Arabic Elementary

Honors and Awards

ExxonMobil Upstream Research Company Scholarship 2019
NVIDIA-KAUST GPU Hackathon, won 1st award out of 7 teams 2018
EAGE GeoQuiz, won 3rd award out of 37 teams worldwide 2017
KAUST PhD Scholarship, annual funding of 70k$, Saudi Arabia 2016 - 2020
GPX Scholarship from IPGP and MINES ParisTech, France 2014 - 2015

Certificates

Cornell Graduate School of Management
Certificate in Entrepreneurship 2018

Volounteering

Charity fund "Podari Zhizn" activities 2017 - now
Enrichment Programs at KAUST 2016 - now

Leadership

President of SEG Student Chapter at KAUST 2017
Head of public transport cards department of Student Union at MSU 2011 - 2014

Personal Projects

WaveProp in MATLAB - a kit of 6 single-file codes in MATLAB for 2D and 3D acoustic and elastic wave propagation in time domain. Solves problem of simple start for beginners in wave propagation.

Journal articles

1. Deep learning for low-frequency extrapolation from multi-offset seismic data
   O Ovcharenko, V Kazei, M Kalita, D Peter, T Alkhalifah
   Submitted to GEOPHYSICS 2019
2. 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
3. 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.

Selected conference papers

1. Style transfer for generation of realistically textures subsurface models 2019
   O Ovcharenko, V Kazei, D Peter, T Alkhalifah
   SEG Technical Program Expanded Abstracts
2. Transfer learning for low frequency extrapolation from shot gathers for FWI applications 2019
   O Ovcharenko, V Kazei, D Peter, T Alkhalifah
   81th EAGE Conference and Exhibition
3. Low-frequency data extrapolation using feed-forward ANN 2018
   O Ovcharenko, V Kazei, D Peter, T Alkhalifah
   80th EAGE Conference and Exhibition
4. Feasibility of moment tensor inversion for a single-well microseismic data using neural network 2018
   O Ovcharenko, J Akram, D Peter
   GEO Conference and Exhibition
5. A robust neural network-based approach for microseismic event detection 2017
   J Akram, O Ovcharenko, D Peter
   SEG Technical Program Expanded Abstracts

References

Available upon request