Oleg Ovcharenko

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CONTACTS

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INTERESTS

Geophysics & Machine Learning

Inverse Problems, Numerical Modeling, Data Analysis, Entrepreneurship

EDUCATION

King Abdullah University of Science and Technologies, Saudi Arabia

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

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. New way of doing ultrasonic medical imaging.
- 10k$ PostUp program funding for PoC

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
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

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 Fellowship, annual funding of 70k$, Saudi Arabia 2016 - 2020
GPX Fellowship 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. Shot-to-shot low-frequency data extrapolation for FWI by a deep CNN.
   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. 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 2019
2. Low-frequency data extrapolation using feed-forward ANN 2018
   O Ovcharenko, V Kazei, D Peter, T Alkhalifah
   80th EAGE Conference and Exhibition 2018
3. 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
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. 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