Oleksandr Fialko

3/108 Ocean View Road
Northocote, 0627
Auckland

Phone: 09 414 0800 ext. 43492
Mobile: 021 293 58 39
Email: oleksandrfialko@gmail.com
Web: www.linkedin.com/in/oleksandr-fialko-932b8340

Personal statement

I am seeking employment opportunities as a data scientist in data heavy industry in which I can perform extraction, manipulation, and analysis of large data sets utilizing my programming and SQL skills. I wish to enthusiastically extend to data-centered industrial research with my passion founded in theoretical statistical physics, where I have gained solid postgraduate experience in applied mathematics and computational techniques.

Skills

- **Analytical, problem solving and writing skills**: I have written more than 20 scientific papers in reputable international physics journals.

- **Programming Skills**: Python (including scipy, numpy, pandas), Matlab, R, Fortran, machine learning, SQL (Transact SQL, Administering Microsoft SQL Server, Implementing SQL data warehousing).

- **Communication:** I have given 7 talks at national and international physics conferences.

Education

June 2016, **Certificate in "Machine learning"**, Stanford University on Coursera.

March 2016, **Certificate in "SQL Server Implementation and Support",** AMES I.T. Academy (New Zealand).

June 2010, **Doctor of Natural Sciences (with high distinction)**, University of Augsburg (Germany).

June 2005, **Master in Physics (with honor)**, Kiev National University (Ukraine).

June 2004, **Bachelor in Physics (with honor),** Kiev National University (Ukraine).

Work history

2013 – 2016, **Physics researcher** at Institute of Natural and Mathematical sciences, Massey University (New Zealand)

- Fast-Start Marsden fund (Mar 2013) on the project “Understanding quantum thermodynamics with the smallest heat engine”. Funded by the Royal Society of New Zealand. Amount: NZ$ 300,000.
- Dodd-Walls Centre New Ideas Research fund (Dec 2015) for work on “Investigating quantum non-equilibrium thermodynamics with bright solitons”. Amount NZ$ 25,000.
- Published 10 papers in top international journals.
- Visiting Researcher (Aug 2015) at the Fujian Normal University, China. Funded by Fujian Normal University.
- Gave 7 oral presentations at national and international conferences.
- Referee for the American Physical Society journals: Physical Review Letters, Physical Review A, Physical Review E.

2010 – 2013, **Postdoctoral Fellow** at Centre for Theoretical Chemistry and Physics, Massey University (New Zealand)

- Published 6 papers in top international journals, including 4 in Physical Review Letters of the American Physical Society.
- Visiting Researcher (Oct 2012 – Nov 2012) at the Swinburne University, Australia,. Contested travel funding by Swinburne University.
- Supervised an internship student on the research project “Nucleation in finite topological systems during continuous metastable quantum phase transitions”

2005-2010, **Research assistant,** University of Augsburg (Germany)

- Published 6 papers in top international journals.
- 2 research visits (Sep 2006-Nov 2006 & Oct 2007-Dec 2007) to the Institute of Physics, USP, Sao Paulo, Brazil. Funded by DAAD (German Academic Exchange Service).
- Supervised a master student on the research project “Inelastic scattering of atoms in a double well”.

Oral Presentations

- Aug 2015, **Invited talk.** International Workshop on Laser Physics, Shanghai, China.
- Jul 2015, **Contributed talk**. NZIP Conference. Celebrating “The International Year of Light”, Hamilton, New Zealand.
- Feb 2015, **Contributed talk.** NZIAS-MPIPKS Return Tandem Workshop on Nonlinear Physics at the Nanoscale, Rotorua, New Zealand.
- Jul 2014, **Invited talk.** International Workshop on Laser Physics, Sofia,Bulgaria.
- Oct 2013, **Contributed talk**. 7th Dodd-Walls Symposium, Dunedin.
- Sep 2013, **Invited talk**. Quantum Technologies Conference IV, Warsaw, Poland.
- Aug 2013, I**nvited talk**. APCTP-ICTP International Conference on Nonlinear Dynamics at the Nanoscale, Pohang, Korea.

Selected Publications

- “Isolated quantum heat engine”, O Fialko & D.W. Hallwood, Physical Review Letters 108 (8), 085303 (2012)
- “Kibble-Zurek scaling and its breakdown for spontaneous generation of Josephson vortices in Bose-Einstein condensates”, SW Su, SC Gou, A Bradley, O Fialko, J Brand, Physical review letters 110 (21), 215302 (2013)
- “Soliton magnetization dynamics in spin-orbit-coupled Bose-Einstein condensates”, O Fialko, J Brand, U Zülicke, Physical Review A 85 (5), 051605 (2013)
- “Quantum simulations of the early universe”, B Opanchuk, R Polkinghorne, O Fialko, J Brand, PD Drummond, Annalen der Physik 525 (10-11), 866 (2013)
- “Quantum tunneling of a vortex between two pinning potentials”, O Fialko, A.S. Bradley, J Brand, Physical review letters 108 (1), 015301 (2012)

Referees

Referees are available on request.