DAVID PURTSELADZE

512-576-7825
d.r.purtseladze@gmail.com
U.S. Permanent Resident

OBJECTIVE

Data Scientist with a Physics PhD and 1 year of experience executing data driven solutions to increase accuracy and efficiency of internal data processing.

- Experience in predictive modeling, web scraping, data engineering and analysis
- 7+ years of research experience in both industry and academic settings
- Core skills: data acquisition, processing, visualization, statistical analysis, classification, image recognition, natural language processing, ETL deployment
- Machine learning models: linear and logistic regression, principal component analysis, naive Bayes, decision trees, k-means, convolutional neural networks, latent Dirichlet allocation, TF-IDF, CPH survival analysis

RESEARCH AND WORK EXPERIENCE

DATA SCIENTIST *OutboundEngine Inc., Austin, TX / March 2019 - Present*

- Conducted survival regression analysis on customer churn data
- Collaborated with team members to developed a business solution to improve customer retention
- Used predictive analytics to design a machine learning model for scoring potential leads, improving cold call conversion rate by 40%
- Utilized webscraping techniques to acquire and organize 350K new leads for real estate marketing
- Automated data acquisition, processing and warehousing from several third party sources
- Designed and deployed a webscraper/webanalyzer to mine contact information from over 5M websites and classify them by business industry
- Automated monthly performance and churn reporting

RESEARCHER *The University of Texas at Austin / June 2012 – December 2017*

- Analyzed, visualized, and modeled electromagnetic field data for various metamaterial applications using COMSOL Multi physics and MATLAB
- Utilized various mathematical tools, including linear algebra, complex analysis, and multivariable calculus to analyze reflection and transmission spectra for bio-sensing applications

TECHNICAL SKILLS

Programming Languages	Python • SQL • MATLAB • R • C++
Software/OS	Linux • Aginity Workbench• Tableau • COMSOL Multiphysics • Wolfram Mathematica • IDL • LaTeX • Inkscape • Microsoft/Libre/Open Office
Tools	H2O.ai • pandas • numpy • scikit-learn • keras • nltk • matplotlib • lifelines • psutil • psycopg2 Amazon Web Services: Redshift, EC2, S3 • Docker • GIT • Jupyter notebook • crontab
Relevant Coursework	Probability Theory, Linear Algebra, Multivariable Calculus, Stochastic Processes, Differential Equations, Computational Mathematics, Complex Analysis, Thermodynamics

EDUCATION

Ph.D in Physics
Physics of Metamaterials
The University of Texas at Austin, 2017

M.S. Applied Math and Physics
Moscow Institute of Physics and Technology (MIPT), 2010

B.S. Applied Math and Physics
Moscow Institute of Physics and Technology (MIPT), 2008

INDEPENDENT COURSEWORK

Self-motivated learning and with demonstrated success from a variety of online data science courses.

Coursera

- ***IBM Data Science Professional Specialization with 9 verified certificates:*** What is Data Science? • Open Source tools for Data Science • Data Science Methodology • Python for Data Science • Databases and SQL for Data Science • Data Visualization with Python • Data Analysis with Python • Machine Learning with Python • Applied Data Science Capstone
- ***Deep Learning Specialization by deeplearning.ai with 5 verified certificates:*** Neural Networks and Deep Learning • Hyperparameter tuning Regularization and Optimization • Structuring Machine Learning Projects • Convolutional Neural Networks • Sequence Models
- ***Other:*** Applied Text Mining in Python, Cryptography I

COMMUNICATION AND LEADERSHIP

- Quick learning abilities and result oriented approach
- Clear communication skills
- Ability to work as a team member as well as independently
- Critical thinking, decision-making and problem solving skills.
- Ability to grasp new ideas and integrate them into desired results
- Experience in handling a variety of projects from concept to completion.
- Teaching formal or informal - taught introductory physics to groups of pre-medical students varying from 15 to 50 in lab and lecture settings; adapted explanations and problems to various skill levels, including non-science majors

HONORS AND AWARDS

Bronze medal of 35th International Physics Olympiad, Pohang, Korea, 2004
3rd place, MIPT Olympiad of Physics, 2006

PUBLICATIONS

1. *Xiang Ni , David Purtseladze, Daria A. Smirnova, Alexey Slobozhanyuk, Andrea Alù and Alexander B. Khanikaev, "Spin and valley polarized one-way Klein tunneling in photonic topological insulators" , Science Advances 11, Vol. 4, no. 5, 2018*
2. *David Purtseladze, A. B. Khanikaev, S. Trendafilov, G. Shvets. "One-way-leaky meta-waveguides based on accidental Dirac cones"(submitted to IEEE Transactions on Antennas and Propagation)*
3. *A.B. Khanikaev, N. Arju, Z. Fan, D. Purtseladze, F. Lu, J. Lee, P. Sarriugarte, M. Schnell, R. Hillenbrand, M.A. Belkin & G. Shvets. "Experimental demonstration of the microscopic origin of circular dichroism in two-dimensional metamaterials", Nature Communications 7, 12045 (2016)*
4. *Nihal Arju, Tzuhsuan Ma, Alexander Khanikaev, David Purtseladze, Gennady Shvets. "Optical Realization of Double-Continuum Fano Interference and Coherent Control in Plasmonic Metasurfaces", Physical Review Letters 06/2015; 114(23):237403*
5. *S Hossein Mousavi, Iskandar Kholmanov, Kamil B Alici, David Purtseladze, Nihal Arju, Kaya Tatar, David Y Fozdar, Ji Won Suk, Yufeng Hao, Alexander B Khanikaev, Rodney S Ruoff, Gennady Shvets. "Inductive tuning of Fano-resonant metasurfaces using plasmonic response of graphene in the mid-infrared", Nano Lett 2013 Mar 19;13(3):1111-7*

ADDITIONAL INFORMATION

Languages English, Russian, Georgian - fluent, Japanese - Japanese Language Proficiency Test Level 3,4