Dr. Nikolai V. Shokhirev

Norwalk, CT 06851
E-Mail: n.shadr@gmail.com
Web: http://www.numericalexpert.com/

Objectives

» Support business with expertise in hard sciences and software engineering to develop cutting edge Data analysis and processing using Advanced statistics, Machine learning, Dynamic and stochastic modeling.

Areas of expertise

» Data science, Technical computing, Research (10++ years).
» Professional software development (10+ years).
» Quantitative modeling and development (7+ years).
» Excellent technical writing and presentation skills.

Experience

10/2016 – present
Early Signal Foundation, New York, NY.
Senior Data Scientist.
Data analysis and processing, Machine learning.
R, Python, NumPy/SciPy, IPython, Git.

1/2016 – present
Ipgrip LLC., Campbell, CA (remote).
Data Science Consultant.
Particle size distribution data analysis and processing. Model development for coincidence errors, Monte Carlo simulations. Inverse problem solution, Analysis of accuracy and resolution.
Mathematica, Python, NumPy/SciPy, IPython, Mercurial (Hg).

3/2015 – 10/2015
Prometheus Research LLC. New Haven, CT.
Senior Software Engineer, Professional Services Department.
Support and development of medical research information systems for data acquisition and management; Database-driven Python applications; Data transformation and validation tool development.
Technical lead in several Migration projects; Open source remote environment;
Python, Pandas, JavaScript, HTML, CSS, JSON, YAML, React, RexDB, htSQL, PostgreSQL, Linux; Agile methodology, JIRA, Mercurial, Git, GNU tools.

1/2015 – 2/2015
Mol3D Research, LLC. Salt Lake City, UT (remote).
Data Science Consultant.
Research on QSAR/QPAR (Structure- and property-activity relationship) algorithms for computer-aided drug design. Developed recommendations for using Ensemble learning (Boosting) for the prediction of property-activity relationship; Python, Pandas, scikit-learn.

9/2013 – 9/2014
JP Morgan Chase & Co. New York, NY.
Application Developer, Credit Portfolio Group.
Backtesting within GAUSS platform, Risk metrics calculations based on Monte Carlo simulations, Statistics, Reporting, Comprehensive data management on a TB scale; Support of Backtesting team's releases. OO Python, NumPy, Pandas, Windows, Linux, Oracle, SQL Developer, Eclipse PyDev, GNU tools, SVN, JIRA, Agile methodology, Unit testing.

5/2007 – 2/2013
Graham Capital Management, L.P. (Global Alternative Investment Strategies), Rowayton, CT.
Quantitative Research Developer, Quantitative Financial Engineering Group.
Developed framework GEL for quantitative trading (C++, Python). Lead efforts to enhance the core functionality by developing data access, transformation and aggregation, time-zone synchronization, portfolio valuation, risk analysis. Implemented numerical, statistical and machine learning libraries for data, analysis and visualization utilizing online algorithms, Fourier and wavelet analysis, Non-parametric Bayesian regression and Extreme-value statistics. Developed anomaly detection algorithms and correlation matrix correction based on the random matrix theory; C#, C++, Delphi, R, Matlab, Ruby, Excel VBA, COM, Win32, .Net, MS VS, Agile methodology, Unit testing, AQTime, FogBugz, Vault.

2/2006 – 4/2007
Environmental Systems Products Holdings Inc., Tucson, AZ.
Sr. Software Design Engineer, New Product Development Department.
Smart automotive management project: Object-oriented design and development, System integration, Software-hardware integration. Developed objects for data acquisition on testing stations, Data exchange with the central server using web services, and Web-based information management system. Database design, development and integration. Microsoft .Net technologies, C#, ASP.Net, VB.Net, MS SQL Server,VSS, TSF.

1/2005 – 1/2006
University of Arizona, Tucson, AZ.
Research Scientist/Scientific Programmer, Department of Chemistry.
Conducted research in Theoretical chemistry and Magnetic spectroscopy. Developed algorithms and software for Data processing in Biochemical research utilizing developed statistical and machine learning libraries, including pattern identification in 1D and 2D NMR spectroscopy. Developed Web-based research information systems. Mathematica, Matlab, R, PHP, Perl, MySQL, SQLite, Delphi/Pacal, Pencil and paper. Published over 10 scientific papers.

11/2004 – 3/2005
LAMP Web Developer, Tucson, AZ.
Independent Contractor.
Developed and implemented Content management system, payment and template-based ad systems for E-commerce websites. Technologies used: PHP, JavaScript, HTML, CSS, SVN, MySQL, Linux, Apache.

3/2004 – 11/2004

Ionatron, Inc., (Directed energy technology), Tucson, AZ.

Sr. Research Scientist - Laser physics and technology.

Developed and implemented algorithms for computer simulation of laser-induced discharge processes. Electrodynamics, heat-mass transfer, physical and chemical model, numerical algorithm, C++ implementation of finite-difference scheme for PDE, large-scale computer simulations. Matlab, Fortran, SVN, Pencil and paper.

11/1999 – 2/2004

TCI Solutions, Inc., (Software solutions for the retail industry), Tucson, AZ.

Software Engineer.

Development and maintenance database applications for stores and store chains supporting pricing, invoicing, receiving, inventory, transfers, authorization; designed and developed business objects for data access in the central server and wireless and Web subsystems. Programming techniques: Delphi/Pascal, C#, COM, ASP, VBA, MS SQL Server, Interbase, Oracle, DB2, RAD Studio, StarTeam, AQTime,. VS.

1/1998 – 10/1999

Ideation International Inc., (Bringing the Science of innovation to the World), Southfield, MI.

Sr. Scientist /Analyst - Innovative consulting, Inventive problem solving.

Conducted and managed projects in innovation, assessment of existing intellectual property and evolution of technology, facilitated inventive problem solving and brain-storming sessions. TRIZ (Theory of inventive problem solving), Technological forecasting (Directed Evolution).

6/1993 – 12/1997

University of Arizona, Tucson, AZ.

Research Scientist, Department of Chemistry.

Research in Theoretical chemistry and Spectroscopy, Computer simulation, Quantum and stochastic modeling, Processing of experimental data, Non-linear regression; PCA and correlation analysis of chemical properties. Developed theory of temperature dependence of NMR spectra and magnetic axes orientation. Increased efficiency of computer simulation algorithms, in some cases more than tenfold. PDE, ODE, Monte Carlo; Pencil and paper, Mathematica, C++, Fortran, Delphi, Pascal, Windows, DOS, UNIX. Published over 20 scientific papers.

Education

Ph.D. in Physics and Mathematics, Russian Academy of Science, Novosibirsk, Russia.

Online detailed resume

http://www.numericalexpert.com/resume/resume.php - responsibilities, tools, etc..

Publications

http://www.numericalexpert.com/resume/publ/all_refs.php .