Dmitry Tolstonogov

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DATA SCIENTIST

Dynamic Data Scientist with over 10 years of professional experience in data analysis and research for various financial firms and scientific institutions. Credited with increasing revenues by using quantitative research to develop algorithms, highly effective trading strategies, predictive modeling, portfolio optimization.

SKILLS

Programming Languages: Python(4yrs), R(3yrs), MATLAB/Octave(13yrs), C# .NET(4yrs), SQL(4yrs), noSQL(1yr)
Frameworks and Libraries: Spark, NumPy, SciPy, pandas, MLlib, scikit-learn, Matplotlib, caret, ggplot2, etc.
IDEs: Anaconda, RStudio, Microsoft Visual Studio
Version Control Systems: Git: GitHub, Mercurial: Bitbucket
Databases: MongoDB, PostgreSQL, Microsoft SQL Server
Operating Systems: Windows, Linux/Ubuntu (Cygwin, Git Bash)
Skills: Data Analysis, Machine Learning, Data Mining, Exploratory Data Analysis, Big Data, Visualization, Modelling

PROJECTS

Property Inspection Prediction (Kaggle competition) with R
Exploratory Analysis of Phisicochemical and Sensory Properties of Wine Dataset with R
Data Wrangle Openstreet Maps Data with Python and MongoDB
Analyzing the New York Subway Dataset with Python

AlgoTrading project: 10/2010 to 05/2015
- Designed and implemented an automated engine that trades Russian futures and stocks at Moscow Exchange automatically.
- Conducted research and modelling and provided prototype strategies in MATLAB and math in C# and collaborated with two team members who built engine framework in C#.
- Used agile methodology to maintain flexibility and better meet the needs of a continuously changing market environment.

TradeSmartResearch project: 08/2003 to 12/2006
Built Genetic Optimizer, Portfolio Analyzer and other quantitative trading tools for TradeStation. Genetic Optimizer achieved 2005 TradeStation Community Choice Award.

PROFESSIONAL EXPERIENCE

Institute of Information and Automation, Russian Academy of Science, St Petersburg, Russia   09/2008 to 09/2010
Senior Quantitative Researcher
Executed value-added research to analyze multidimensional heterogeneous biomedical data. Provided analytical support in the areas of development and analytics, implementation, programming, and reporting
 Key Accomplishments:
- Worked on a team that won a grant from Russian Military by co-developing advanced data mining algorithm, and wrangling, cleaning, and preprocessing data in MATLAB.
- Co-developed new proprietary data mining algorithm that successfully discovered hidden patterns from data, which other popular algorithms (C4.5, CART, WizWhy) could not uncover.
- Was 46th from 2689 submissions at *RSCTC '2010 Discovery Challenge, Data Mining Contest* by solving highly dimensional, few-objects- many-attributes classification problems for DNA Microarrays .

Uniastrum Bank / UTRADE.RU, St Petersburg, Russia   08/2007 to 08/2008
Senior Quantitative Analyst
Designed, tested, and optimized trading strategies for investment funds. Provided analytical support to top-level management in investment concepts, strategies, investment styles, and analytical methodologies.
Key Accomplishments:
- Solved an optimal portfolio problem with real-life constraints and costs using modern optimization technique while avoiding explicit covariance estimation.
- Identified strong patterns for market timing in macroeconomic data with proprietary techniques, resulting in a solid base for effective timing strategies.

PROFESSIONAL EXPERIENCE CONTINUED

Petrounion Investment Company, St Petersburg, Russia   01/2005 to 07/2007
Head of Creative Department
Engineered data management, analytical and trading tools for a start-up investment company.
Key Accomplishments:
- Improved the infrastructure used for statistical analysis by hiring and managing a team of two programmers that implemented HFT stock and futures-on-stock arbitrage.
- Implemented data preprocessing and machine learning algorithms with Neural Network (NeuroShell) and Fuzzy Logic (MATLAB).
- Researched and designed advanced trading strategies and methods, including strategies generated by a personally developed Genetic Optimizer tool.

Adekta Investment Company, St Petersburg, Russia   05/2002 to 12/2004
Quantitative Researcher & Portfolio Manager
Designed trading strategies and managed a Russian stock and bond portfolio.
Key Accomplishments:
- Developed a stat arb commodity trading strategy with Sharpe ~ 3, leading to earnings of over 70% profit per contract at with 5% drawdowns without reinvesting.
- Led a workshop in *Design, Testing, and Optimization of Trading Strategies* as a speaker for the International INTERNET TRADING EXPO Moscow 2003 and the Mechanical Trading Systems Workshop Moscow 2004.
- Contributed articles for the *Modern Trading Magazine* (Russia) that were globally acknowledged and translated into English and Corean.

PREVIOUS PROFESSIONAL EXPERIENCE: *Quantitative Researcher & Portfolio Manager for BCS Investment Company; Quantitative Researcher & Portfolio Manager for Radian Bank; Various Positions (Junior Researcher, Researcher, Senior Researcher) for The Institute of System Dynamics and Control Theory.*

PROFESSIONAL DEVELOPMENT AND TRAINING

Intro to Data Science, Machine Learning, Neural Networks, Model Thinking, Computing for Data Analysis, Financial Engineering and Risk Management, R Programming courses at courcera.org
Intro to Data Science, Data Wrangling with MongoDB, Data Analysis with R, Intro to AI courses at udacity.com
Scalable Machine Learning course at edX.org
Microsoft.Net and C# , Relational Databases courses, Cooper Union, New York, NY
Certified Futures Broker, St. Petersburg Futures Exchange, Russia
Certified Specialist on Security Markets, Ministry of Finance of Russia
School on Dynamic Systems, the International Center for Theoretical Physics, Trieste, Italy
Pre-Graduate Internship, Institute of Nuclear Physics of Russian Academy of Science, Novosibirsk, Russia

EDUCATION

Nanodegree, Data Analyst, Udacity 2015, in progress
PhD, Physics and Mathematics, Institute of System Dynamics and Control Theory, Russian Academy of Science, Irkutsk, Russia 1991, *Concentration and dissertation on the Properties of Solutions of Integral-Differential Equations of Plasma Physics with Applications to Open Traps for Thermonuclear Fusion*
Master of Science, Applied Mathematics, Irkutsk State University, Irkutsk, Russia 1987

PUBLICATIONS & AWARDS

Authored and co-authored a number of research articles in cited international magazines.
Co-created the Genetic Optimizer for TradeStation and awarded the TradeStation Community Choice Award.
Won the National Students Research Papers Contest in Plasma Physics. *Solved the problem that was stated by one of the fathers of the Soviet Nuclear Fusion Bomb 30 years before.*