Ilya Prokin

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Russian national with French visa and right to work in France.

EXPERTISE Machine Learning, Statistics, Computer Science, Probability Theory, Computational Neuroscience.

EDUCATION

Ph.D. Computational Neuroscience 2013 Oct.-2016 Dec.
INRIA Rhône-Alpes Villeurbanne, France

M.Sc. Physics (GPA: 4.63/5) 2011-2013
Lobachevsky State University of Nizhny Novgorod (UNN) Nizhny Novgorod, Russian Federation

B.Sc. Physics (GPA: 4.1/5) 2007-2011
Lobachevsky State University of Nizhny Novgorod (UNN) Nizhny Novgorod, Russian Federation
Courses included: Computational Methods, Dynamical Systems, Probability Theory, Calculus, and Linear Algebra.

EXPERIENCE

Data Scientist / 2018 Jan.-present Dataswati / Maissy Palaiseau, France

- Predictive models for unevenly sampled time-series with uncertainty quantification (Python).
- Built automated data pipeline: from raw data to automated cross-validation based feature selection to predictions.
- Set up collaborations with academic researchers at INRIA.

Independent Researcher / 2017 Jan.-2017 Dec. Self-Employed / Paris, France

- Researched synaptic plasticity exposed to randomized input patterns using Monte-Carlo numerical simulations.
- Bitcoin price prediction & betting bot; including uncertainty quantification (Python/sklearn/scipy/selenium).

Ph.D. Research / 2013 Oct.-2016 Dec. INRIA Rhône-Alpes / Villeurbanne, France

- Developed a Data-Driven Mathematical Model which explained the dependence of synaptic learning on the activity of neurons and experimental conditions. See https://github.com/iprokin/Cx-Str-STDP.
- Worked with various experimental and synthetic datasets: Data Cleaning, Parsing, Transformation and Modeling.
- Numerical Stochastic Simulations of Differential Equations, Parameter Optimization, Sensitivity Analysis.
- Python for Data Analysis (NumPy, SciPy, PANDAS, sklearn, and matplotlib) and Numerical Optimization (PyGMO); Numerical Integration in FORTRAN95 interfaced with Python using f2py (x100 faster than Python+SciPy+NumPy).
- 2 scientific publications (one in *eLife*, top 10% journal in biology/neuroscience), 2 submitted.

Research Internship /2013 July-Aug. RIKEN Brain Science Institute / Saitama, Japan

- 3-D reconstruction of neuronal spines from a stack of two-photon microscopy images in MATLAB.

Graduate Research / 2011-2013 Institute of Applied Physics / Nizhny Novgorod, Russian Federation

- Processing 64-dimensional time-series data recorded from neuronal cultures grown on multi-electrode arrays.
- Developed a method for graph reconstruction from the time-series data generated by graph's nodes.
- Time-series correlation and its statistical significance in C++; data manipulation/visualization in MATLAB.

Undergraduate Research / 2009-2013 UNN / Nizhny Novgorod, Russian Federation

- Solved numerically Differential Equations based model of a Neural Network with a customized Runge-Kutta in C++.
- 2 international scientific publications describing the model of interacting neurons and an adaptive synapse.

INDEPENDENT PROJECTS

- Halite II AI Programming Challenge (top 3%). https://halite.io/user/?user_id=2559.
- Machine Learning powered RSS reader, built with Python and Naive Bayes approach with web-UI (CSS/HTML/JavaScript/Python). https://github.com/MLdog/nayesdog.
- Py_XPPCALL: Python interface to XPPAUT. https://github.com/iprokin/Py_XPPCALL.
- PokerC, Poker Odds Calculator (Haskell). https://github.com/iprokin/pokerc.
- Haskell parser of Kospi market data from UDP packets in pcap file. https://github.com/iprokin/pcapKospi200.

SKILLS

- OS: GNU/Linux and OS X (4 years), FreeBSD (3 months), and Windows (14 years).
- Technologies: Python (including SciPy, NumPy, PANDAS, and sklearn) (>40000 SLOC[1]), Fortran 90/95 (>3000 SLOC), bash/zsh (>2500 SLOC), C/C++ (>15000 SLOC), MATLAB/Octave (>25000 SLOC), Haskell (>5000 SLOC), HTML, CSS, LaTeX, SQL; familiar with InfluxQL, XPPAUT, NEURON, NEST, and LabView.
- Languages: Russian (native), English (fluent), French (limited working proficiency).

AWARDS

- **INRIA PhD Fellowship**, INRIA, Oct. 2013 - Dec. 2016.
- **Best Graduate Research**, UNN, Apr. 2013.
- The Dynasty Foundation scholarship, Jan.-June 2013. One of 40 winners out of 149 applicants.
- **Research Achievements** scholarship, UNN, Jan.-Dec. 2012. Given to 12 out of about 250 students.
- **Best Talk award**, 16th Scientific Conference on Radiophysics, UNN, 15 May 2012. One winner of 14 presenters.

1. SLOC: Source Lines Of Code↩