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Adrian Ionita
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ADRIAN IONITA

profile

Data scientist focused on computational modeling with a strong background in software engineering. Education and industry experience lead to a deep understanding of the scientific and development challenges faced when building machine learning systems. I am able to support companies in data science tasks, develop research concepts and turn them into production code.

tech skills

Programming

Python, **SQL**, **R**, MATLAB, C/C++, JavaScript, Java, C#, CUDA, Ruby (automation and scripting)

Data Science

Principal Component Analysis, Independent Component Analysis, Fourier Domains, **Monte Carlo Markov Chains**, **Cluster Analysis**, Agent Based Modeling, **Bayesian Methods**, Particle Filters

Machine Learning

Deep Learning (Classification & Regression), **RBF Networks**, SOM, **RNN**, Committee Machines, Belief Propagation, Reinforcement Learning, Hebbian Learning, Improving Generalisation & Training Speed

projects

Efficient input-space sampling for fresh data acquisition — Jan 2018 - Current

- Given a small set of data, determine what new data needs to be acquired to achieve a representative view of the input space
- Developing a general purpose Bayesian technique that estimates the new records needed to improve machine learning prediction

Key Technologies: Python, Bayesian Methods / Probabilistic Programming

Semantic Representation In Human Language — Sep 2016 - Current

- Developing custom sentence tokenising, enabling reuse across non-english languages
- Researching unsupervised training techniques for language structure and semantic representation

Key Technologies: R, Python, Deep Learning (RNN), PyTorch, Dynet

Fuel Savings Prediction Model — Jan 2017 - May 2017

- Designing statistical model that estimates fuel and repair savings from optimal tyre inflation for fleets of vehicles
- Guiding junior analyst in model implementation, teaching good code practices

Key Technologies: R, Monte Carlo Markov Chain

Customer Flow Forecasting, Udacity competition — Feb 2017 - Mar 2017

- Processing large dataset of customer transactions into time series, enabling easier analysis and prediction
- Experimenting with various time series prediction approaches leading to a solution that placed team in top 10%

Key Technologies: R, ICA, Fourier Domains, Cluster Analysis, Regression

Computational Model For Tool Use Reasoning, University of Birmingham — Apr 2016 - Dec 2016

- Laid foundation for a computational model of human tool use, ensuring future extensibility and reproducibility
- Evaluated physics engines for faithful simulation of real physical interactions, enabling accurate experimentation
- Proposed novel technique for shape matching, that employs surface level correlation to mimic geometric reasoning

Key Technologies: C++, MATLAB, Physics Simulation, PCA

Products on Virtual Shelves, Walmart Labs competition — Oct 2016

- Training RBF network on features extracted from product description, in order to assign products to shelves

Key Technologies: MATLAB, PCA, NLP, RBF Networks

Robotic Model For Optimal Gaze Control, University of Birmingham Dec 2015 - Apr 2016

- Implemented neural network model that learns optimal gaze strategies from environment feedback
- Model considers sensory uncertainty in its internal belief state when evaluating choices for gaze locations
- Performance is far beyond random gaze, improving time efficiency by reducing number of ocular fixations

Key Technologies: MATLAB, Particle Filters, RBF networks, Reinforcement Learning

employment

Data Scientist, Jigsaw.xyz - *contract* Jan 2018 - Current

- Researched novel technique to acquire the minimal data needed in training machine learning with robust prediction.
- Delivered from the ground up a data science platform, exposing prediction services and analytics to the rest of the company.

Key Technologies: Python, SQL, R, Node.js, Bayesian Modeling / Probabilistic Programming

Data Scientist NLP *and founder*, Iceiony Ltd Sep 2016 - Current

- Designed and developed a prototype for interactive stories using NLP, proving a new product feasibility
- Researching neural network techniques to enable better semantic parsing in conversational text

Key Technologies: R, Python, Node.js, Deep Learning (RNN), PyTorch, Dynet

Software Developer, Opentable International Ltd - *contract* Aug 2017 - Oct 2017

- Migrated legacy solution from outdated .net to a newer version, increasing team productivity by enabling modern development tools
- Created docker build process to further streamline already impressive deployment and scaling infrastructure
- Developed new features crosscutting .net and node services to create a better experience to customers

Key Technologies: C#, Node.js, Docker, Mono

Mobile Developer, BBC - *contract* Aug 2014 - Sep 2015

- Developing mobile apps for staff and reporters, enabling better access to internal systems
- Developing software to create authentication access cards, eliminating turnaround time and costs to suppliers
- Setting up build and infrastructure automation, streamlining the software development process

Key Technologies: C#, Java 7, Reactive Extensions, Windows Phone, Android, Jenkins, Chef

Software Developer, Wonga.com Jun 2013 - May 2014

- Defined and developed the back-end service architecture, that improved system maintainability and scalability

Key Technologies: C#, NserviceBus, Nhibernate, Jenkins, Powershell

Software Engineer, Wiggle ltd Apr 2011 - Jun 2013

- Developed and integrated internal systems using micro-services architecture, solving the reliability issues crosscutting systems across the company

Key Technologies: C#, SQL, ASP.NET, MVC2, T-SQL, NserviceBus, RavenDB, Python, Micro-Services

education

MSc. Computational Neuroscience and Cognitive Robotics, University Of Birmingham, 2016

Focused on computational methods, modeling and neural networks

Graduated with distinction

MSc. Computer Security, University Of Birmingham, 2010

Graduated with distinction

Oracle Academic Initiative, University Of Bucharest, Romania, 2009

BSc. Computer Science, University Of Bucharest, Romania, 2009

Degree focused on algorithmics and theoretical computer science

Equivalent of distinction

Diploma for Excellence in Computer Science, National Center For Excellence, Romania, 2006

Awarded for academic performance in advanced algorithmics

references

Available on request