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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 artificial intelligence systems. I am able to support companies in data science tasks, develop research concepts and turn them into functional software.

tech skills

Programming

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

Data Science

Principal Component Analysis, **Independent Component Analysis**, Fourier Domains, **Monte Carlo Simulations**, **Clustering**, 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

Semantic Representation In Human Language , Iceiony Ltd — Sep 2016 - Current

- Evaluating neural network frameworks, to enable choosing the most appropriate for language processing
- Debunking the latching problem in recurrent network training, leading to better training methods
- Developing custom sentence tokenising, enabling reuse across non-english languages
- Designing unsupervised training techniques for language structure and semantic representation

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

Telemetry Events Aggregation — Oct 2017 - Current

- Implementing efficient processing of telemetry reading on low spec hardware, enabling reporting to business

Key Technologies: R

Fuel Savings Prediction Model — Jan 2017 - May 2017

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

Key Technologies: R, Monte Carlo Simulation

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

- Organising and leading team members for competition, whilst distributed across globe
- Flattening large dataset of customer transactions into time series, enabling easier analysis and prediction
- Frequency domain analysis of sales, gaining insight into customer buying habits
- Hierarchical and cluster analysis showing similarities in sales between different retailers
- Experimenting with various time series prediction approaches (e.g. ARIMA, ICA & Regression, Neural Networks) leading to a solution that placed team in top 10%

Key Technologies: R, ICA, Fourier Domains, Clustering, 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 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

Developer, Opentable International Ltd - *contract* Aug 2017 - Sept 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

- Helped define the back-end service architecture, improving system maintainability and scalability
- Implemented new back-end service features, enabling new types of loans to be served to customers
- Added continuous integration tooling, which improved the robustness of deployments

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

Software Engineer, Wiggle ltd Apr 2011 - Jun 2013

- Developed and refactored the legacy consumer site, gradually improving the rate of feature development
- Automated load testing, which highlighted devastating issues experienced at peak website traffic
- Developed and integrated internal systems using micro-services architecture, solving the reliability issues crosscutting systems across the company

Key Technologies: C#, 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

Received scholarship for academic performance

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