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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, R, SQL, MATLAB, AWS, Docker, C/C++, JavaScript, C#, CUDA, ElasticSearch, MongoDB

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 sampling for determining minimum viable data** Jan 2018 - Current

- Given a small set of data, determine which records are required to achieve a representative view of the input space.
- Developing Bayesian inference techniques to estimate the minimum viable records needed for training a given model implementation.

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, Deutsche Bank - <i>contract</i>	July 2018 - Current
	<ul style="list-style-type: none"> Assessing model correctness for measuring IT Risk, improving credibility and business confidence. Getting the experimental model production ready, with optimised computation time and maintenance cost. 	
	<i>Key Technologies: R, Oracle PLSQL</i>	
	Data Scientist, Jigsaw.xyz - <i>contract</i>	Jan 2018 - July 2018
	<ul style="list-style-type: none"> Led data science team and mentored junior developers in mathematical techniques. Delivered from the ground up a data science platform, exposing prediction services and analytics to the company. Mapping value opportunities for data science to key problems and enabling route to market. Researched novel technique to acquire the minimal data required in training machine learning with robust prediction. 	
	<i>Key Technologies: Python, SQL, R, Node.js, ElasticSearch, AWS, Bayesian Modeling / Probabilistic Programming</i>	
	Data Scientist NLP and founder, Iceion Ltd	Sep 2016 - Current
	<ul style="list-style-type: none"> 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 	
	<i>Key Technologies: R, Python, Node.js, Deep Learning (RNN), PyTorch, Dynet</i>	
	Software Developer, Opentable International Ltd - <i>contract</i>	Sep 2017 - Nov 2017
	<ul style="list-style-type: none"> Migrated legacy solution from outdated .net to a newer version, increasing productivity by enabling modern 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 	
	<i>Key Technologies: C#, Node.js, Docker, Mono</i>	
	Mobile Developer, BBC - <i>contract</i>	Aug 2014 - Sep 2015
	<ul style="list-style-type: none"> 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 	
	<i>Key Technologies: C#, Java 7, Reactive Extensions, Windows Phone, Android, Jenkins, Chef</i>	
	Software Developer, Wonga.com	Jun 2013 - May 2014
	<ul style="list-style-type: none"> Defined and developed the back-end service architecture, that improved system maintainability and scalability 	
	<i>Key Technologies: C#, NserviceBus, Nhibernate, Jenkins, Powershell</i>	
	Software Engineer, Wiggle Ltd	Apr 2011 - Jun 2013
	<ul style="list-style-type: none"> Developed and integrated internal systems using micro-services architecture, solving the reliability issues crosscutting systems across the company 	
	<i>Key Technologies: C#, SQL, ASP.NET, MVC2, T-SQL, NserviceBus, RavenDB, Python, Micro-Services</i>	
education	MSc. Computational Neuroscience and Cognitive Robotics, University Of Birmingham,	2016
	<ul style="list-style-type: none"> Focused on computational methods, modeling and neural networks Graduated with distinction 	
	MSc. Computer Security, University Of Birmingham,	2010
	<ul style="list-style-type: none"> Graduated with distinction 	
	Oracle Academic Initiative, University Of Bucharest, Romania,	2009
	BSc. Computer Science, University Of Bucharest, Romania,	2009
	<ul style="list-style-type: none"> Degree focused on algorithmics and theoretical computer science Equivalent of distinction 	
	Diploma for Excellence in Computer Science, National Center For Excellence, Romania,	2006
	<ul style="list-style-type: none"> Awarded for academic performance in advanced algorithmics 	
references	Available on request	