



ADRIAN IONITA

profile *R developer with experience in computational modeling and 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
R, Python, 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

employment

R Developer, LLOYDS (via EPAM) - contract Mar 2020 - Current

- Supporting the migration of on-premise systems to Azure in a strategy to save millions in data centre costs.
- Providing the R tools and knowledge needed by the modelling team for an efficient day to day operation.
- Automating tests and building R packages that ease the testing process of new system releases.
- Automating detection and fixes of code issues on thousands of R scripts, saving time and enabling reusability.
- Automating model output reconciliation process from Excel to R improving reliability and maintainability.
- Performance testing and improving R code execution time in Azure.

Key Technologies: R, SQL, RSCONNECT, Tidyverse, Testing Automation

R Developer, UBS (via Accenture) - contract Jun 2019 - Feb 2020

- Onboarding risk models into simulation platform ensuring reliable operation for regulatory runs.
- Setting up code base for continuous integration and deployment leading to a streamlined development process.
- Adapting code for execution at scale using SparkR.

Key Technologies: R, CI/CD, SparkR

Data Scientist NLP, EDF Energy - contract Dec 2018 - May 2019

- Consulting the business on AI/ML capabilities and lesser known limitations, shaping long term AI strategies.
- Identifying value opportunities from applied data science modeling and language processing automation.
- Delivering insights into customer queries and complaints, guiding business focus to high volume chat-bot cases.
- Developing novel improvements to unsupervised topic modeling, allowing query classification with little training data.

Key Technologies: Python, LDA topic modeling, CorEx topic modeling, Neural Network Classification

Data Scientist / R Developer, Deutsche Bank (via HCL) - contract July 2018 - Apr 2019

- Bringing proof of concept model for assessing IT Risk into production readiness.
- Assessing model correctness and improving credibility with business stakeholders.
- Optimising computation time which reduced execution from weeks to hours.

Key Technologies: R, Oracle PLSQL

Data Scientist, Jigsaw.xyz - contract Jan 2018 - July 2018

- 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.

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



projects

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: Python, R, C++, Node.js, Deep Learning (RNN), PyTorch, Dynet

Further Work History Available on [LinkedIn](#) 2010 - 2016

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

Semantic Representation In Human Language Sep 2016 - Current

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

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

Efficient input sampling for determining minimum viable data Jan 2018 - Mar 2018

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

Key Technologies: Python, Bayesian Methods / Probabilistic Programming

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

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