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Adrian Ionita 🔗

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ADRIAN IONITA

profile

Data science engineer focused on computational modeling, with a strong background in software engineering and 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; recognized for a keen ability to engage with stakeholders, accurately discerning their true needs through attentive listening and insightful questioning. My approach ensures the delivery of solutions that are not only technically sound but also highly relevant and applicable, thereby empowering organizations to meet their objectives effectively.

tech skills

Programming

Python, **R**, **JavaScript**, Test Driven Development (TDD), Docker, Azure, AWS, PySpark, C++, SQL, MATLAB, C#, CUDA

Data Science

Principal Component Analysis, Independent Component Analysis, Fourier Domains, Monte Carlo Markov Chains, Cluster Analysis, Anomaly Detection, Imbalanced Learning, Entity Resolution, Bayesian Methods, Particle Filters

Machine Learning

Deep Learning (Classification & Regression), **RNN**, RBF Networks, SOM, Committee Machines, Reinforcement Learning, Hebbian Learning, Improving Generalisation & Training Speed, **Natural Language Processing (NLP)**, **Decision Trees / Random Forests**

employment

Data Science Engineer, SC+ - *contract*   Jan 2025 - Mar 2025

- Designing the system artictecture for a product linking information across public sources of data at scale and with a focus on strict operational security.
- Developing data cleanup and entity resolution algorithms to identify the same entity (e.g. person or company) across different sources.
- Coordinating team members to deliver a feasible and useful solution to the end client.

  Key Skills: Python, Software Architecture, Entity Resolution, Splink, PySpark, Graph Database

Data Science Engineer, Programable.io (via SWBI) - *contract*   Nov 2023 - Nov 2024

- Developing an insurance fraud detection system, leveraging AI/ML to find more likely cases of fraud.
- Driving the product design by leveraging the arf of the possible in AI/ML to enhance the end user prodictivity.
- Exposing prediction reasoning to help investigators understand the model's decision making.
- Simplifying graph representations of claims to help investigators find collusion and relations to past cases of fraud.
- Predicting the duration of investigations to prioritide cases by the best financial outcome.

  Key Skills: Python, TDD, Random Forests, Imabalanced Learning, Information Theory, Network Graphs, Entity Resolution

Data Scientist, EDF Trading - *contract*   Nov 2021 - Nov 2023

- Deriving, from raw trade data (i.e. level 3), the exact logic to calculate price candles, saving £100k / year in licensing.
- Developing trade anomaly detection algorithm, helping company satisfy compliance and regulatory obligations.
- Developing prediction algorithm for next day's price correlations (96.5% accuracy); to estimate future profit and loss.
- Implementing liquidity algorithm for a more a representative view of the market.
- Developing systems, tools and algorithms for extracting bid/offer information from emails, eliminating time waste from manual retrieval.

  Key Skills: Python, JavaScript, Flask, Docker, TDD, NLP, Random Forests, RNN

R Developer, LLOYDS (via EPAM) - *contract*   Mar 2020 - Oct 2021

- Supporting the actuaries modelling central capital, in the smooth migration of their systems to Azure.
- Optimising R functionality to bring large performance improvements (10x) by optimising data access in Azure.
- Training actuaries on R best practices, improving the reliability of their code and day to day operations.

  Key Skills: R, Rcpp, C++, SQL, RSConnect, Tidyverse, TDD

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 Skills: R, CI/CD, SparkR, TDD

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, and language processing automation
- Delivering insights into customer queries and complaints, guiding business focus to high volume chat-bot cases

  Key Skills: Python, LDA topic modeling, CorEx topic modeling, Neural Network Classification, TDD

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 Skills: R, Oracle PLSQL, TDD

Further Employment History Available on LinkedIn   2010 - 2016

additional projects

Crypto Trading Algorithms and Analysis   Nov 2021 - Current

- Developing a volatility based trading algorithm that leverages the high price fluctuation of crypto assets.
- Algorithmically determining the optimal trading points for historic data.
- Estimating price direction from orderbook.

  Key Skills: R, C++, Dynet, ctree, algorithms

Semantic Representation In Human Language   Sep 2016 - July 2021

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

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

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

- Designing algorithm for a small data set, which determines the miminimum number of records to form a representative view of the input space.
- Developing Bayesian inference technique to estimate the minimum viable records needed for training a model proposition.

  Key Skills: 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 Skills: R, Monte Carlo Markov Chain

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