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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 technically sound and highly relevant, thereby empowering organizations to meet their objectives effectively.*

Skills

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

Data Science:
Imbalanced Learning, Algorithms, Language Models, Anomaly Detection, Entity Resolution, Monte Carlo Markov Chains, Bayesian Methods, Particle Filters, Cluster Analysis, Principal Component Analysis, Independent Component Analysis, Fourier Domains

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

Experience

Quant Developer, Iceiony LTD - founder Apr 2025 - Current

- Building a business applying data science techniques to crypto asset trading.
- Developing volatility based trading algorithms that acts on high price fluctuations.
- Algorithmically determining the optimal trading points for historic data.
- Predicting price direction from orderbook derived metrics.
- Building backtesting and data gathering frameworks to play back historic events executing the same code as production.

Key Skills: Python, R, C++, Neural Networks, algorithms

Data Scientist / Engineer, SecureCloud+ - contract Jan 2025 - Mar 2025

- Designing the system architecture for a product, linking information across public sources of data at scale and with a strict focus on operational security.
- Developing data cleanup and entity resolution to identify people and companies across different data sources.
- Collaborating on product design and feasibility, helping design the pitch deck to ultimately win the client's interest.
- Coordinating team members to deliver a useful solution to the end client's needs, whilst meeting the company's own objectives for a strategic platform.

Key Skills: Python, Software Architecture, LLMs integration (extraction and translation), Entity Resolution, PySpark

Data Scientist / 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.
- Contributing to the product design by leveraging the art of the possible in AI/ML to enhance the end user productivity.
- 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 prioritise cases by the best financial outcome.

Key Skills: Python, TDD, LLMs (fraud explanation), Information Theory, Network Graphs, Entity Resolution

Data Scientist, EDF Trading - *contract*

Nov 2021 - Nov 2023

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

Key Skills: Python, JavaScript, Flask, Docker, TDD, NLP, LLM chatbots, 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, Chatbots, LDA topic modeling, CorEx topic modeling, Neural Network Classification, TDD

Further Employment History Available on [LinkedIn](#)

2010 - 2016

Projects

Semantic Representation In Human Language

Sep 2016 - Jul 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 minimum 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

University Of Birmingham (UK)

2015-2016: MSc. Computational Neuroscience and Cognitive Robotics - **distinction**

2009-2010: MSc. Computer Security - **distinction**

University Of Bucharest (Romania)

2006-2009: BSc. Computer Science - equivalent **first class honours**

National Center For Excellence (Romania)

2006: Diploma for Excellence in Computer Science