Cezar Prodan

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Experience

Next PLC - *Senior Data Scientist (R&D, Recommendation Algorithms)* Aug 2023 - Present

ML, Algorithm Development, Problem Solving:

- Delivering profit through creation of product recommendation systems
- Implemented GPU batch processing with custom low-level PyTorch matrix operation to optimise CORNAC GRU model inference. Achieved 300x runtime reduction, which significantly reduced operation costs
- Introduced the first round of two-tower recommender systems at Next, currently in testing
- Owner of stock-level predictor model, which uses robust statistical methods and time-series to ensure strict business rules for recommendation delivery
- Researching ML techniques for time-series Anomaly Detection (Ongoing)
- Developed comprehensive Python tools and frameworks used across the team
- Designed end-to-end ML systems integrating varied data sources (financial, UX, meteorological, product description, natural language)
- Developed custom loss functions and other low-level ML implementations from first principles, in instances where pre-built packages were insufficient
- Built various other LSTM, CNN, Classifier, Regression, Random Forest, XGBoost models

Collaboration and stakeholder management:

- Owner of the department's A/B testing tool, which performs analysis on a complex and vast user action dataset. This tool is fundamental for test validation and team KPIs
- Collaborating with non-technical creative teams in ideation, project and business requirements definition, establishing KPIs and performance metrics
- Set up reliable long-term dashboards reporting live KPIs for various stakeholders
- Managed models in high-stakes environment where incorrect predictions directly impact revenue
- Partnered with Data Engineering and Technology teams to deliver production ML systems

Rockborne - *Senior Data Science Consultant* Sept 2021 - Aug 2023

- Consultant at NEXT with the same attributes as above

Education

The University of Edinburgh 2017-2021

Master of Physics in Mathematical Physics (MPhys) - 2:1

- Master's Thesis: Locating the potentially hazardous lost asteroid 1979XB
  - Applied advanced statistical methods to prescribe a new, robust method of asteroid location
  - Developed image processing techniques for cleaning, analysis, signal modelling
  - Created algorithms for signal detection with sub-pixel accuracy in noisy environments
- Relevant courses: Data Analysis and Machine Learning, Numerical Recipes, Computer Modelling, Statistical Physics, Probability, Programming and Data Analysis

Skills

- **Data Science**: Data Cleaning and Preprocessing, Pipelines, Data Mining, Azure
- **ML**: TensorFlow (Core API), PyTorch, scikit-learn, XGBoost, CORNAC, PyOD, Low-level ML coding, Embeddings. Wrote proprietary DNN with numpy
- **Time-Series**: LSTM, GRU, Prophet, ADTK, Anomaly Detection
- **Languages**: English, Romanian, Russian