CristinaMorariu

Contact

+49 176 73501222
cristina@morariu.ro

morariucristina
@kix2mix2

Tech Skills

ML

Python: >6 years
Tensorflow: >2 years
R: >4 years
Hadoop: <3 months

VIS

Plot.ly: >4 years
Dash: >2 years
ggplot2: >2 years
d3: 1 year
Observablehq: <6 months

Services/Architecture

(intermediate level)
SQL
Mongo
Neo4J
Docker, docker-compose
AWS, Heroku
Python Flask

Crowdsourcing

AB Testing: 3 studies
Amazon MTurk: >6 months
Study-design: 3 studies
jsPsych: >6 months

Consultancy Skills

Proposal Writing: £700k won
Team Building: team of 4
Public speaking: >20 industry
events, meetups, conferences

Work

ML for Automatic Design Research   **VISUS** 07/19 - Now

- created/evaluated ML models of human perception used to automate design parameters.
- ran a range of crowd sourcing experiments on Amazon Mechanical Turk
- currently managing 3 research assistants and their individual projects
- ongoing research:
  - **Vis2Data** - Recommendation System for visualization types based on graphics people share on Twitter/Tableau Public.
  - Perception based Recommendation System for Dimensionality Reduction
  - **SepMe** - Ran a crowdsourcing study on Amazon Mechanical Turk to record perception of cluster separability in visualizations. We built a model on top of this recordings, that we then used to optimise design parameters for visualization to best visualize the data according to human perception.

Senior Data Scientist / Consultant   **decisionLab** 06/18 - Now

- **Illegal Activity Detection for the UK Space Agency**
  lead ML engineer/product owner on satellite app that helps South American police/army detect illegal activities carried out in the Amazon forest & predict where they will happen in the future.
- **Active Learning Risk Predictor for South East Water**
  designed and implemented 'human-in-the-loop' method designed to collect risk data from humans (active learning) and infer rules for future ML-aided decisions.
- **Predictive Maintenance for Royal Navy**
  project owner/lead scientist for the design, development & deployment of the first ML solution ever released in a Royal Navy operational environments.
  Demo: **PAEAN**
- **Reinforcement Learning for Manufacturing Line Optimization**
  implemented a policy gradient method in Anylogic in order to improve decisions on the job allocation problem. outperformed the off-the-shelf Anylogic algorithm (OptQuest).
- **Dispersion Modelling for Hazardous Agents - Pool Re**
  developed a Gaussian dispersion model of chem-bio agents in London to help the reinsurance industry estimate the costs of building damage resulting from unconventional terrorism.
- **Survey of the latest research in Multi-Agent Reinforcement Learning** for the naval industry (150 papers cited).

Data Scientist / Consultant   **decisionLab** 09/17 - 06/18

- **Predictive Maintenance for Rolls Royce**
  data scientist on the development team of a predictive maintenance solution using **LSTMs** and **autoencoders** to predict remaining useful life of A380 plane and Eurofighter Typhoons.
- **Manufacturing Line Optimization for Rolls Royce**
  developed **ensemble model (xgboost, random forests, GLMs)** to determine the main factors who lead to performance improvements on manufacturing line. Our suggestions improved productivity og the manufacturing line by 15%.

Data Scientist — **Shpock** 06/16 - 09/16

- analyzed registration/log-in funnel in order to identify design mistakes that lead to drops in user registrations
- analyzed inApp Store purchases and contributed to the redesign of the store which improved traffic by 20%
- conducted AB tests for new designs in the app (off- and online)

Teaching Assistant: Human-Computer Interaction — **University of Vienna** 03/16 - 06/16

Education

MSc in Machine Learning & Operational Research — **University of Edinburgh** 09/16 - 09/17

- **Grade:** Distinction
- **Main subjects:** Machine Learning & Pattern Recognition, Biomedical Data Science, Data Mining & Exploration
- **Thesis:** *Feature Selection for Biomarker Discovery*
  The goal was the identification of groups of predictors (biomarker panels) for heart diseases such as CHD or diabetes. This was achieved by implementing and comparing the output of various state-of-the-art classification/feature selection models such as: random forests, group lasso, deep neural networks.
- **Tools Used:** R, Shiny

BSc in Computer Science — **University of Vienna** 10/12 - 01/16

- **Grade:** 2:1 degree
- **Main subjects:** Scientific Data Management, Visualisation & Data Analysis
- **Thesis:** Lattice Sampling Methods

Hackathons & Awards

Machine Learning Summer School (url) — **Tübingen, Germany** Summer 2020
Max Planck Institute for Intelligent Systems

Unilever AI Challenge Winner — **Digital Catapult** 2019
RL solution that optimizes Unilever packaging lines.

Royal Airforce AI Challenge Winner — **Digital Catapult** 2019
Visual Athletics system that allows user explore maintenance data and decide prioritization of maintenance jobs.

Bombardier UK-Canada AI Challenge Winner — **Digital Catapult** 2018
Best image segmentation for ice formation on plane wings.

**A Unified Asset Health Model
and Risk Forecasting Tool using Advanced Machine Learning** — **OR60 Publication** 2018

National Applied Mathematics Olympiad - 2nd Place — **Iasi, Romania** 2012
Also participated in 2019 and 2010 with top 10 results.

National Applied Mathematics Olympiad - 1st Place — **Iasi, Romania** 2011