Eric Roseren

Address: 33 Rue Jules Wilhelm – Luxembourg city – Luxembourg

Nationality: French, Luxembourgish

Position: Machine Learning Researcher

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EDUCATION

University of Edinburgh **Edinburgh, United Kingdom**
Master of Science in Statistics and Data Science with Merit *November 2018*

University of Southampton **Southampton, United Kingdom**
Bachelor of Science in Mathematics with First Class Honours *July 2016*

University of Southampton **Southampton, United Kingdom**
Diploma of Higher Education in Chemistry with Second Class Honours *July 2014*

WORK EXPERIENCE

Luxembourg Institute of Science and Technology (LIST) **Esch-Belval, Luxembourg**
Machine Learning Researcher *June 2019 -*

o Contributed on generating new ideas, concepts, models and solutions for digital transformation projects.

o Build Extraction, Transformation and Loading (ETL) pipelines for various sources of data to simplify re-training of predictive models.

o Implemented parametric and non-parametric methods applied to raw industrial data for the optimisation of manufacturing processes.

o Presented analyses and results via interactive Shiny dashboards. Deployed prediction model in production using simple FLASK API.

o Gained significance experience in cloud computing functionalities via professional training from IBM. Responsible of testing and validating LIST's private cloud platform.

INDEPENDENT RESEARCH PROJECTS

Consultancy project: *Liver cancer: Investigating the risk factors* *July 2017 - August 2017*

o Analyzed data in R from 2000 patients with repetitive measurements over 10 years, totalling over 20000 samples.

o Developed a statistical model to estimate the survival rate of patients with liver cancer.

o Implemented Markov Chain Monte Carlo algorithms using statistical softwares.

o Gained practical experience in extracting, cleaning and analysing longitudinal healthcare data.

Consultancy project: *Discovering Conflict Patterns* *June 2017 – July 2017*

o Identified best predictors of conflicts from the Armed Conflict Location Event Data (ACLED) and World Bank's data indicators. Built an unsupervised classification model to forecast risk of instability in African regions.

o Reduced dimensionality of the data set using Principal Component Analysis.

o Performed end-to-end analysis on data; exploratory time series analysis, data wrangling, model training and evaluation.

Third year report: *Interpolation methods and their application* *October 2015 – December 2015*

o Implemented and compared different interpolation methods (spline,polynomials) in MATLAB.Verified validity of comparison outcome by manipulating oceanographic data set.

ADDITIONAL EXPERIENCE

Deep Learning Specialization   **deeplearning.ai**
Stanford University   *January 2019*

o Took part of a series of five courses in deep learning; significantly improved understanding of convolutional neural networks and sequence models.

o Gained experience structuring machine learning projects.

o Improved deep neural network accuracy through efficient hyperparameter tuning, regularization and optimization techniques.

o Successfully implemented the theory into healthcare, autonomous driving and sign language reading projects.

Python Programming   **Massive Open Online Course**
Wesleyan University   *July 2017*

o Learned basic manipulations in the Python language.

o Practiced efficient data mining techniques through weekly assignments.

o Enhanced data wrangling, descriptive statistical analysis and data visualization.

Machine Learning   **Massive Open Online Course**
Stanford University   *November 2016*

o Used predictive analytics such as linear regression, neural networks and support vector machine techniques for both regression and classification task.

o Implemented supervised and unsupervised learning algorithm in MATLAB (spam filter, digit recognition and sentiment analysis algorithm).

o Gained knowledge in basic Neural Networks architecture,Support Vector Machine and Nearest Neighbour.

TECHNICAL COMPETENCES AND COMMUNICATION SKILLS

Language	Skills
o French (native).	o **Statistical and numerical modelling** : Advanced knowledge in R and JAGS (Bayesian statistics). Good knowledge of Python and Matlab.
o English (full professional proficiency, C2).	o **Data mangling and visualisation**: Advanced knowledge of *dplyr* and *ggplot2* libraries for data preparation and visualisation. Good knowledge of *Pandas*, *NumPy* and *Seaborn* for the equivalent in Python.
o German (Limited working proficiency, B2).	o **Machine and Deep learning frameworks**: Good knowledge of TensorFlow, Keras and scikit-learn libraries.
o Italian (Limited working proficiency, A2).	o **Version system control (GIT), relational databases and IDE environment**: Familiar with relational database (PostgreSQL,MySQL, IBM Db2), good knowledge of GIT. Proficient user of RStudio, Jupyter Lab and PyCharm Professional.

REFERENCES

Dr.Alexandru Tantar, Group Leader of the Business Analytics team at LIST (alexandru.tantar@list.lu)

Dr.Riad Aggoune, Senior Researcher and member of the Business Analytics team at LIST (riad.aggoune@list.lu)