Ariola Leka

Machine Learning Engineer/Data Scientist/Data Analyst

Zurich, Switzerland · leka_ariola@yahoo.com · GitHub AriolaLeka · +41 778133800

EXPERIENCE

Beyond Gravity & ZEISS SMT (Lithography Division) **Zurich, Switzerland**
Data Science Intern in Lithography **Aug 2024 - Jan 2025**

- Developed a statistical process control tool to detect short/long-term trends and out-of-family behaviors in semiconductor manufacturing. Extended the internal data architecture to ingest and normalize supplier measurement data in diverse formats. Contributed to core Python libraries (SQLAlchemy, Plotly Dash, Pydantic), working in an agile team with automated testing, code reviews, and pair programming.

Istituto Dalle molle di Studi sul'Intelligenza Artiffciale (IDSIA) **USI, Lugano, Switzerland**
Research Assistant - Machine Learning **April 2024 - Jul 2024**

- Extended Thesis research, increases the number of experiments using the same baseline, leading to a more robust discovery.

MGSoftware, BloomDev **Tirana, Albania**
Software Developer Internship **Nov 2018 - Jun 2020**

- Developed multiple web pages using HTML, CSS, PHP, JavaScript, jQuery, and MySQL, which culminated in my bachelor's thesis interactive course, leading to improved educational delivery and a better engagement teacher-student.

EDUCATION

Master of Science in Informatics, Minor in Artificial Intelligence **USI, Lugano, Switzerland**
Università Della Svizzera Italiana **Sep 2021 - Feb 2024**

- **Thesis: Machine Learning Approaches for Predicting Pest Insect Behavior in Corn Crops: A Comparative Analysis, Grade: 9.5/10**
  - I develop and compare multiple machine learning models to accurately predict the flight time of Ostrinia Nubilalis, a significant agricultural pest. I employ advanced techniques including ARIMAX, Gradient Boosting Regressor, NARX, LSTM, and Graph Deep Learning models. This leads to increased forecasting from a yearly statistic to a 10-day in advance prediction of the flight time of the pest and establishing temperature as a critical factor influencing pest behavior.

Bachelor in Telecommunication Engineering **Polytechnic University of Tirana, Tirana, Albania**
Polytechnic University of Tirana **10/2017 - 11/2020**

- **Thesis: Designing a Website for an Online Course, Grade: 10/10**: I developed an interactive online course website to enhance student-professor interactions and streamline information dissemination. I implemented features such as lecture distribution, quiz creation, and result analysis, leading to improved educational delivery and engagement.

PROJECTS

GMAN: A Graph Multi-Attention Network for Traffic Prediction - Reproducibility Project, Grade: 9/10

- Reproduced and enhanced a spatiotemporal traffic prediction model, achieving a 51.49% improvement in 7–12h air quality forecasting. Demonstrated robustness across diverse datasets, highlighting GMAN's adaptability to various time-series tasks.

Fruit Clustering Analysis Using Machine Learning, Grade: 9.5/10

- Executed a clustering project on 150 fruit samples using K-Means, Agglomerative Clustering, and GMM, based on features like diameter, weight, and vitamin content. Performed thorough data preprocessing and exploration, achieving 63% classification accuracy and uncovering meaningful patterns across fruit types.

Predictive Analysis of Bike Rental Demand Using Machine Learning, Grade: 10/10

- Developed a predictive model to forecast bike rental demand, analyzing 17 variables, including weather conditions, time, and date. Employed data exploration, preprocessing, and various machine-learning techniques, built and compared three models: Random Forest Regression, Linear Regression, and Multi-layer Perceptron for accuracy using metrics like MAE, MSE, and R-squared. The project leads to a 0.83 R-squared in the prediction of the demand for future bikes.

Languages

- Native Albanian / English C1 / Italian B2 / Spanish B1 / German A1