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Aliaksandra Skrypko

Education

Master's in Mathematical Modeling and Research, Statistics, and Computing **2022 -**
University of Oviedo (interuniversity)

Specific courses in: Evolutionary Computing Techniques, Databases and Object-Oriented Programming, Introduction to Data Mining, Statistical Modeling, Stochastic Processes and Probability, Time Series, Signal and Image Processing.

Double Degree in Physics and Mathematics **2016-2022**
Univerisity of Oviedo

Professional Experience

FINBA **Dec. 2022 - July 2023**
Research Support Personnel
Department of Applied Artificial Intelligence in Clinical Medicine

- Project "Creation of a tool for the comprehensive management of cardiac amyloidosis through artificial intelligence techniques"

Principales tareas:

- Cleaning and mining data from the SESPA healthcare system (Health Service of the Principality of Asturias), creating databases in MySQL, statistical analysis
- Proposal, training, evaluation, and optimization of models for predicting disease progression in patients

Reaserch Experience

University of Oviedo. Department of Physics **Nov. 2020 - April 2021**
Collaboration Scholarship from the Ministry of Education

- Project "Structure and Physical Properties of Nanoparticles of Transition Metal Oxides"

Main tasks:

- Through data analysis using specialized software in the field of material characterization, as well as programming in Python, models have been proposed to explain the internal structure of nanoparticles
- Practical work guides have been developed for the specific open-source software in the field of nanostructure characterization (for internal use)

Projects

Application of Machine Learning Techniques in Medical Imaging **2021-2022**
Bachelor's Thesis Project
Main objective:

- Study of chest X-rays using machine learning algorithms to predict the progression of patients with COVID-19

Main tasks:

- Preparation of the X-ray database: cleaning, standardization of format, automatic processing, and storage of images for subsequent studies with Matlab
- Processing and analysis of X-rays, extraction of characteristic features (data mining) using machine learning techniques, and image processing
- Prediction of disease progression in patients based on X-rays using artificial intelligence algorithms
- Optimization of predictive machine learning models, evaluation, and comparison of different models, selection of the most suitable models and metrics for the specific medical case

Predictive methods in time series and reinforcement learning techniques **2022-**
Master's Thesis Project (pending defense)
Objetivo principal:

- Aplicación de aprendizaje automático por refuerzo profundo (DRL) para las predicciones en series temporales financieras con la idea de extender los modelos a realizar acciones automatizadas en el mercado

Main objective:

- Training and optimization of Deep Reinforcement Learning (DRL) models for trading on financial index components such as DJ30 and NSDQ100
- Study of the influence of a particular selection of technical indicators on the performance of a set of 5 types of DRL algorithms
- Analysis of operational constraints and their impact on the performance of the models
- Development of methods for joint decision-making of multiple models (ensemble approach) for result stabilization

Knowledge & Skills

Programming	Python, Matlab, R, LaTeX
Idiomas	English (C2), Spanish, Russian (native)
Other	MySql, Microsoft Office