

# ANDRÉ RAMOLIVAZ

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## EXPERIENCE

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### European Central Bank

*Data Scientist Trainee, Supervisory Technology and Data Division*

*Frankfurt, Germany (09/2022 - 12/2022)*

- Developed and implemented data cleaning and preprocessing techniques using R for a 4TB of unstructured data which reduced total process time by 15%.
- Led a machine learning project in Python utilizing Decision Tree, Random Forest, and XGBClassifier to predict NPE and PE exposures during banking supervision. Addressed class imbalance through supervised techniques such as Cluster Centroids under-sampling and SMOTE over-sampling, enhancing model performance and accuracy by 20%.
- Developed a Flask web app for the prediction, integrating the previous trained machine learning models using Pickle, and crafting an intuitive user interface with React for input submission and result presentation.
- Presented results to the Senior Management Team and wrote requested executive summary detailing value proposition to present to supervisors.
- Contributed to developing a software tool for ECB's internal models, enhancing the language model's NER by 10% using Reinforcement Learning.
- Acquired Scrum project management expertise and applied it to effectively coordinate a huge text mining project involving external and internal stakeholders, while managing and tracking IT consultant tasks.

### ITPR Corrado Gex

*Substitute Teacher of Calculus and Statistics for High School*

*Aosta Valley, Italy (09/2021 - 02/2022)*

- Prepared lessons and exams for 70+ students from different classes and levels.
- Supported students in analytical assignment and provide classes to fosters specific topics.

### ARPA Valle d'Aosta

*Software Engineer Intern, Integrated Technology Services Division*

*Aosta Valley, Italy (09/2020 - 12/2020)*

- Developed an Arduino-based prototype for tracking environmental parameters, with a sensor system that wirelessly transmits data to a mobile app for trend analysis and possible climate implications.
- Created a phone app using Flutter to collect data, and display the results with additional data analytics insights.
- Presented the team work project to the BB-CLEAN conference for the Interreg Alpine Space project and to Edutech 2021 as a low cost robotic prototype of eco-sustainability and environmental monitoring.

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## SELECTED PROJECTS

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### A Social Network Analysis of Central Banks

[ [Report](#) | [Code](#) ]

- Implemented web-mining and API libraries to collect data and preprocessing techniques using Pandas.
- Performed data cleaning (e.g. tokenization, stopword removal, and lemmatization), applied NLTK and VADER with domain-specific dictionaries to enhance tweet sentiment and emotion analysis.
- Extracted and visualized top hashtags using Pandas and Seaborn, examining frequency and sentiment relationships.
- Applied Gensim's LDA for topic extraction and NetworkX for topic-word association visualization.

### TFY-My Bank: A Fictional Trading App

[ [Report](#) | [Code](#) ]

- Designed and implemented a stock data processing pipeline using Alpha Vantage API and an ad hoc relational MySQL database for data retrieval, storage and analysis.
- Developed an optimized web interface with secure user authentication and CSRF token protection using PHP and Bootstrap, enabling real-time visualization and analysis of historical stock data and transaction made by the user.
- Implemented an algorithm to create candlestick charts for displaying stock data using Google Charts API, allowing users to filter the displayed data by time period.

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## EDUCATION

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### Ca' Foscari University of Venice

*Bachelor of Computer Science*

*(2021 - present)*

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## SKILLS

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**Programming Languages** R, Python, C, C++, Java, PHP, HTML, CSS, JavaScript, MySQL, PostgreSQL  
**Languages** Italian (native), French (fluent), English (fluent)