

FRANCESCO VATTIATO

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[f](#) [k](#) ◊ Portfolio ◊ [G](#) [in](#)

WORK EXPERIENCE

STMicroelectronics

November 2020 - February 2022

Data Scientist

Catania, IT

I worked as a Data Scientist employed in some research projects. The quality of the work done by my team was high enough to publish an article (see Publications section). My main tasks were:

- **Preprocessed** and **analyzed** time series data obtained from sensors during the wafer's productive process.
- Trained and evaluated **machine learning** and **deep learning** models for the **unsupervised** anomaly detection on wafers.
- Explained the carried work through detailed **technical reports** and **plots**.

EDUCATION

M.S. in Computer Science (Data Science) — University of Catania, Italy

2019 - 2021

Final score: 110/110 cum laude (highest score achievable in Italy)

B.S. in Computer Science — University of Catania, Italy

2015 - 2019

Final score: 100/110

PUBLICATIONS

An Ensembled Anomaly Detector for Wafer Fault Detection. *Sensors* **2021**, **21**, 5465

Furnari, G.; Vattiato, F.; Allegra, D.; Milotta, F.L.M.; Orofino, A.; Rizzo, R.; De Palo, R.A.; Stanco, F

In this paper it has been proposed an ensembled anomaly detector method that combines univariate and multivariate analysis to build up a method that retains an high recall (**100 %** and **98 %**) and number low false allarms on two different datasets.

PROJECTS

Hob Assistant [G](#)

- The goal of this project was to capture pictures of hobs with 4 station with pots and a pan on them, and then model a **CNN** capable of counting the number of pots (max 2) and capable of detectubg the presence of a pan.
- The final model achieved an **accuracy of 89%** on 6 different classes.
- It was developed a smartphone demo that allows to try the model in real-time hobs.

House Price Prediction (Kaggle Open Competition) [k](#)

- In this project, I had to predict house prices. I first applied the **PCA** dimensionality reduction method and then designed an **ensembled model** that consisted of a **Linear Regressor** and a **Gradient Booster Regressor**.
- The model achieved a score that placed it in the top **17%** projects.

Omicron vs Delta [k](#)

- In this project, I had performed some **EDA** that compared the Delta and Omicron Covid-19 variants.
- The analysis **confirmed** the higher infectivity of the Omicron variant.

TECHNICAL STRENGTHS

Computer Languages

Proficient in Python & **Familiar** with SQL, R, C, C++, C#, Java

Machine Learning

Classification, Regression, NLP, Outlier Detection, Dimensionality Reduction, Ensembling

Deep Learning

CNN, MLP, Autoencoder, Transfer Learning

Data visualization

Matplotlib, Seaborn, Plotly

Libraries

Pandas, Numpy, Scikit-Learn, Pycaret, Keras, Pyspark, Pytorch

Others

Microsoft Office, Databricks, StreamLit, Latex, Binder, GIT, Docker