Francesco Parisio

PhD, Data Scientist, Civil Engineer

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EXPERIENCE

THE INSTITUTE OF ENVIRONMENTAL ASSESSMENT AND WATER RESEARCH |
Postdoctoral Fellow - Marie Skłodowska-Curie Actions

Sep 2021 – Current | Barcelona, Spain

Tasks: • Leading researcher of EU H2020 project ARMISTICE • Combining geologic carbon storage and supercritical geothermal systems • Building deep-learning models to forecast geothermal energy production • Developing a physics-informed machine learning framework to simulate flow in porous media

TECHNISCHE UNIVERSITÄT BERGAKADEMIE FREIBERG | Research Scientist

Mar 2019 - Aug 2021 | Freiberg, Germany

Tasks: • Principal Investigator of project HIGHER • Computer simulation of supercritical hydraulic fracture propagation • Analysis of mechanics of rock at brittle-ductile transition • Experiment design in collaboration with Tohoku University, Japan

HELMOHOLTZ CENTRE FOR ENVIRONMENTAL RESEARCH | Research Scientist

Jan 2017 - Feb 2019 | Leipzig, Germany

Tasks: • Code developer of multi-physics solver OpenGeoSys (C++) • Research on computational multi-physics of fractured porous media • Partner in H2020 project GEMex for the development of supercritical geothermal resources

ÉCOLE POLYTECHNIQUE FÉDÉRALE DE LAUSANNE | Research and Teaching Assistant

Aug 2012 - Aug 2015 | Lausanne, Switzerland

Tasks: • Research on shale mechanics for geological storage of nuclear waste • Computational multi-physics modeling of rocks • Tunnel excavation safety analysis for the Mont Terri Underground Research Laboratory

PROJECTS

TIME SERIES FORECAST OF CO_2 EMISSIONS | Statsmodels
2022 - Forecasting a 1 year horizon of CO_2 emissions stemming from natural gas based electricity production in the United States by optimizing and cross-validating a SARIMAX model.

RECOMMENDATION OF AMAZON PRODUCTS | Collections, Sklearn, Surprise
2021 - Recommend the best amazon products available to the users by using some recommendation systems techniques.

HOUSING NUMBER DIGIT RECOGNITION | Sklearn, Keras, TensorFlow
2021 - recognizing the street view housing number digit by using artificial and convolutional neural networks.

LOAN ELIGIBILITY PREDICTION | Sklearn
2021 - predicting the eligibility of the bank customers for a loan by using a random forest classification algorithm.

PREDICTING THE BOSTON HOUSE PRICES | Sklearn, Statsmodels, Scipy
2021 - predicting the house prices based on the features of the locality using multivariate linear regression.

SKILLS

ANALYTICAL
Linear algebra, probability, statistics, applied mathematics, numerical methods

PROGRAMMING
Python, SQL, LaTeX C++, Matlab, FORTRAN

MACHINE LEARNING
Clustering, Regression, Decision Trees, Random Forests, Time Series, Neural Networks, Recommendation Systems

LIBRARIES/FRAMEWORKS
Numpy, Pandas, Scipy, Matplotlib, Sklearn, Statsmodels, Keras, Seaborn, TensorFlow, PyTorch

TOOLS/PLATFORMS
Git, Linux Shell, Docker, IDE

SOFT SKILLS
Project management, public speaking, collaborative development, mentoring

LANGUAGES
Italian (Native), English (C2), French (C2), German (B2), Spanish (B2)

EDUCATION

MIT, USA
Applied Data Science Program
Oct 2021 - Jan 2022

EPFL, SWITZERLAND
PhD Geomechanics
Aug 2012 - Jun 2016

TURIN POLITECNICO, ITALY
BSc + MSc Civil Engineering
Sep 2005 - Dec 2011

GRANTS AS PI

PROJECT HIGHER
German Research Science Foundation (granted sum: €285'550)

PROJECT ARMISTICE
Marie Skłodowska-Curie Actions (granted sum: €160'932.48)