



Loulia Markou

DATA SCIENTIST · MACHINE LEARNING EXPERT

Virum Stationsvej 141D st.tv. 2830 Virum, DENMARK

☎ (+45) 8191 0356 | ✉ iouliasm@gmail.com | 🏠 www.imarkou.com | 📱 iouliamarkou | 📧 markou.ioulia

About me

A highly efficient, hardworking, well-organized and responsible data scientist with background on civil engineering. Enhanced understanding, knowledge and experience on Machine Learning, Statistical Analysis and Big Data Analytics through projects on advanced analytical models development, data fusion, and policy making for business goals navigation and achievement. Possession of a very good ability of cooperation and team work, deadline oriented and capable to successfully combine personal initiatives with clients' requirements.

Work Experience

Technical University of Denmark - DTU

Kgs. Lyngby, Denmark

RESEARCH ASSISTANT

Dec. 2018 - PRESENT

- Danish National Travel Survey Data Management and Optimization: Handled missing responses using machine learning techniques in Python. Keras, Pandas, Scikit-learn libraries used for framework's development.
- Collaboration with the City of Copenhagen: Employing data science techniques on different data sources using Python for public and private transport demand and supply distribution understanding. Results visualization using Matplotlib, Plotly, Seaborn Libraries in Python, as well as ArcGIS Application.

Technical University of Denmark - DTU

Kgs. Lyngby, Denmark

RESEARCH FELLOW - PH.D STUDENT

Dec. 2015 - Dec. 2018

- Implemented advanced analytical models for demand forecasting using data fusion techniques in Python and R. Assessed and compared innovative machine learning and deep learning techniques, measuring their performance in various metrics (Scikit-learn, Tensorflow, Pandas, Matplotlib Python libraries).
- Implemented text analysis using regular expressions, topic modeling and word embeddings for better management and integration of large corporate datasets.
- Exploited data-sets from the Web using Application Programming Interfaces (APIs) and web scrapping techniques
- Successfully published 3 papers for high-impact journals. Research results were also presented in 6 conferences, including the prestigious TRB.
- Designed and co-taught "Data Science and GIS for Mobility" Course (MSc Level) - Python programming course.

Technical University of Munich - TUM

Munich, Germany

GUEST RESEARCHER

Jun. 2018 - Aug. 2018

- Developed an innovative analytical model structure for predictions enhancement. Results accepted and presented in Transportation Research Board's Annual Meeting.
- Provided support and guidance to master students for research results optimization

National Technical University of Athens - NTUA

Athens, Greece

RESEARCH ENGINEER

Jan. 2015 - Oct. 2015

- Undertook the EMPaCo Project (Efficient Management of Parking under Constraints).
- Proposed innovative strategies for the optimal parking management schemes using the TransModeler Traffic Simulation Software and written scripts in Matlab
- Implemented automated data cleansing from smartphone sensors, derived insights, predictions and correlations, generated visualizations and reports.
- Made critical contributions to the project's results publication and digital initiatives - Scientific workshop co-organization

Singapore MIT Alliance for Research and Technology - SMART

Singapore

RESEARCH ENGINEER

Nov. 2013 - May 2014

- Developed Matlab scripts for the calibration of MIT's simulation-based traffic predictor (DynaMIT). Collaboration with a team of software and transport engineers from MIT.
- Stored and manipulated traffic data in databases using PostgreSQL.
- Systematic engagement with the new data received from the Singapore Ministry of Transport for quality assurance and accurate representation of ground truth.

OTE S.A.

Athens, Greece

CALL CENTER EMPLOYEE

Aug. 2010 - Jul. 2011

- Learned to work under very high levels of pressure
- Developed effective communication skills

Honors & Awards

2013-2015	Eugenides Foundation Scholarship , for postgraduate studies. Received after exams and background evaluation from the institution.	<i>Athens, Greece</i>
2012	N.T.U.A. Award , Graduating 2nd among the degree holders of the faculty of Rural and Surveying Engineering.	<i>Athens, Greece</i>
2012	OTE S.A. Award of excellence , High average score in undergraduate courses.	<i>Athens, Greece</i>
2010	Xatzopoulos Award , Highest score in the undergraduate courses of Representational Geometry and Projective Geometry.	<i>Athens, Greece</i>
2010	Papakiriakopoulos Award , Highest score in the undergraduate courses of Mathematics.	<i>Athens, Greece</i>
2007	Bank EURO BANK Ergasias S.A Award , Highest average score in Greek national exams among all students in 15 th High school of Athens.	<i>Athens, Greece</i>

Education

DTU - Technical University of Denmark

Kongens Lyngby, Denmark

PH.D. IN MACHINE LEARNING FOR MOBILITY

Dec. 2015 - Dec. 2018

- Thesis title: Detection, analysis and prediction of traffic anomalies due to special events.
- Indicative courses: Introduction to Machine Learning, Data Science and Visualization, Time-series analysis, Teaching and Learning

NTUA - National Technical University of Athens

Athens, Greece

M.SC. IN GEOINFORMATICS

Oct. 2012 - Sep. 2014

- Indicative courses: Analytical and Statistical Methods in Geoinformatics, Urban and Regional Planning using GIS, Spatial Databases, Telematics Applications in Transportation Infrastructure.
- Eugenides Foundation Scholarship for 2 years.

NTUA - National Technical University of Athens

Athens, Greece

MENG. IN RURAL AND SURVEYING ENGINEERING

Sep. 2007 - Sep. 2012

- Specialization: Transport Engineering and Planning.
- Indicative courses: Transportation Systems, Highway Design and Operation (project-oriented course), Design of Transportation Facilities other than Highways and Principles of Transportation Economics, Components Of Road Construction Projects.
- Diploma (5-year) in Rural and Surveying Engineering. Mark 8.74/10.
- 5 Scholarships and Awards

Skills

Languages	Python, R, Matlab, SQL, Java, C++, html, TeX
Software	PyCharm, PostgreSQL, WebStorm, Visual Studio Code, Jupyter Notebooks, Git, SAS, ArcGIS, QGIS, AutoCAD
Frameworks / Libraries	TensorFlow, PyTorch, Keras, Numpy, Pandas, Matplotlib, Scikit-Learn, Scipy, nltk (Natural Language Toolkit), Seaborn, Ggplot, Plotly, Geoplotlib, D3
Analytical Skills	Big Data, Constructing Predictive Models, Data Analytics, Data Mining, Producing Data Visualizations