



Ioannis Karkanias

Python Developer, Physics PhD

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Other: [LinkedIn](#), [Github](#)

Skills

Data Science

scipy, pandas, numpy, matplotlib, PySpark, ROOT, SQL

Artificial Intelligence (AI) / Machine Learning (ML)

sk-learn, PyTorch, Keras, LangChain, gradio, HuggingFace

Web Development

Flask, REST APIs, PostgreSQL, Tailwind, Docker, Jekyll

Experience

Web Developer & Writer

DECEMBER 2022 - PRESENT

- [Journal Hub](#) - Prototype literature discussion platform, allowing users to have public and private discussions over research articles from arXiv, PubMed and more. Uses a Flask backend, RDBMS storage and Google/LinkedIn authentication. Hosted with Docker and nginx.
- iokarkan.github.io - personal Jekyll tech blog/portfolio project, showcasing AI/ML demos and original content about AI, ML and Data Science in python.

IT Business Analyst / Arhs Developments Hellas

DECEMBER 2021 - DECEMBER 2022

Principal Business Analyst on a Big-Data analytics project, with data quality, anonymisation and tiered database pipelines. Coordinated development effort with User Stories, and automated Requirements and Impact analysis using MS Excel and python.

PhD in Experimental Particle Physics / Aristotle University of Thessaloniki

NOVEMBER 2017 - JUNE 2022

Statistical profile-likelihood analysis in physical system experimental particle collision data from the ATLAS experiment at the LHC at CERN, in collaboration with an international analysis group ([Thesis](#)).

- Binned hypothesis testing using kinematic variables and classification (ML and DL) scores for observed data and simulated signal and background in parameter estimation of physical extension models.

- Synthetic data generation using SMOTE and GANs.
- Systematic error modeling in python and data visualization with ROOT.

Selected Courses

Data Analysis with Python, Open Uni (2022) / Helsinki University

MARCH 2023

- Python | numpy | pandas (time series) | matplotlib | sk-learn (Linear Regression, Naive Bayes, Clustering, PCA)

PyTorch for Deep Learning in 2023: Zero to Mastery / Udemy

MARCH 2023

- Python | PyTorch | Fine-tuning | Computer Vision | Transformer models

The Flask Mega Tutorial / Udemy

MARCH 2023

- Python | Flask | SQLAlchemy | APIs | SQLite | Elasticsearch

Big Data Platforms / Helsinki University

NOVEMBER 2021

- Python | PySpark | RDDs | DataFrames | MLlib | GraphFrames

Full Stack Open 2021 / Helsinki University

AUGUST 2021

- Javascript | React | Express | Selenium | MongoDB

Education

MSc in Elementary Particle Physics / Durham University, UK

2016 - 2017

Graduated with Distinction.

BSc in Physics / Aristotle University of Thessaloniki

2011 - 2016

Graduated following the Theoretical Physics curriculum and a GPA of 8.11/10.

Languages

Greek - Native Speaker

English - Professional Level (C2)

German - Advanced Level (C1)