

# Ioannis Karkanias

Python AI & Data  
Science Developer,  
Physics PhD

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Website: [iokarkan.github.io](http://iokarkan.github.io)

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

## Skills

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### Data Science

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

### Open-Source Artificial Intelligence / Machine Learning

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

### Web Development

Flask, REST APIs, Tailwind, Jekyll

## Experience

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### Tech Blog Writer / [iokarkan.github.io](http://iokarkan.github.io)

DECEMBER 2022 - PRESENT

Maintenance of personal Jekyll 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.

## Courses

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

MARCH 2023

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

MARCH 2023

**The Flask Mega Tutorial** / Udemy

MARCH 2023

**Big Data Platforms** / Helsinki University

NOVEMBER 2021

**Ethics of AI** / Helsinki University

SEPTEMBER 2021

**Full Stack Open 2021** / Helsinki University

AUGUST 2021

## Education

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**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

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**Greek** - Native Speaker

**English** - Professional Level (C2)

**German** - Advanced Level (C1)