

Ioanna Gemou

ioannagemou@gmail.com ♦ Website ♦ GitHub ♦ LinkedIn

EDUCATION

MSc in Biomedical Engineering

Technical University of Denmark

Sep 2023 – Jul 2025

MEng in Electrical & Computer Engineering

University of Patras, Greece

Oct 2018 – Aug 2023

Major: Computer Science

GPA: 7.65/10 (Ranked 15th among 350 students in cohort)

Thesis: Semi-automated, Deep-Learning based Segmentation and Analysis of Mouse-Brain Stroked Tissues.

EXPERIENCE

Brown University

Research Scholar

May 2024 – ongoing

Developing a method for drug interaction prediction by integrating Graph Neural Networks and Large Language Models.

Building a composable utility library for Machine Learning.

Advisors: Ritambhara Singh, Nikos Vasilakis

Radiometer Medical A/S

Electronics & Software Engineer (Part-time)

Aug 2023 – Aug 2024

Responsible for performing hardware and software tests on medical devices.

Group of Translational Neurology Research (GTNR)-NKUA

Research Assistant

Oct 2022 – May 2024

Responsible for the technical development and implementation of projects focused on neurological disorders, employing advanced machine learning techniques in data analysis and neuroimaging.

EnzyCeuticals PA

Data Science Intern

Sep 2022 – Dec 2022

A research project leveraging the KNApSAcK Database and machine learning methods to classify and cluster species based on specific metabolites, aimed at advancing cosmetic and pharmaceutical development.

Bionos Biotech S.L. (Erasmus+ Placement)

Software Engineer Intern

June 2022 – Aug 2022

Valencia, Spain

Built data processing web applications using R and Python which replaced many manual processing tasks.

Improved volunteer management system using statistics, resulting in a faster volunteer selection process.

Patras Junior Codecamp

November 2021

Teaching programming to high school students through two lectures and workshops on the topics of Computer Visualizations & Computer Applications

ACHIEVEMENTS

Motor Imagery Brain-Computer Interface for Rehabilitation after a Brain Stroke Episode

November 2022

1st Prize in the competition organized by the AI Hub at the University of Patras.

IEEEExtreme 16.0 Competition

October 2022

Developed solutions to programming challenges during a 24h competition.

Placed globally at the top 4% among 6373 teams.

SELECTED PROJECTS

EEG-to-Text Translation

Feb 2024 – June 2024

Exploring the use of LLMs for interpreting EEG data to address the challenges associated with silent speech communication. [code]

Research course, Supervisor: Prof. Sadasivan Puthusserypady

SSVEP Signal Classification in BCIs

January 2024

Explored various classification techniques for SSVEP signals, combining traditional signal processing and modern deep learning algorithms. [code]

Course: Brain-Computer Interfaces, Prof. Sadasivan Puthusserypady

Automatic and explainable disease prediction using LLMs and Answer Set Programming

Spring 2023

Developed an illness prediction framework by integrating Large Language Models with Answer Set Programming, which analyzes patient's symptoms, enabling clear and explainable diagnoses. [code]

Drug Formulation Problem

Spring 2023

Developed a solution for the drug formulation problem using linear programming techniques. [code]

Course: Linear & Combinatorial Optimization, Prof. Sofia Daskalaki

Identifying Parkinson's Disease through Speech Analysis

December 2022

Analyzing tabular data to identify patterns and markers indicative of Parkinson's Disease. [code]

Course: Personalized Biomedicine and Telemedicine Systems, Prof. Kalliopi Dalakleidi

PUBLICATIONS

Amina Abdullahi, **Ioanna Gemou**, Nihal V. Nayak, Stephen Bach, Ritambhara Singh, *Leveraging Graph Neural Networks and Large Language Models for Scalable Zero-Shot Drug Interaction Prediction* (In Preparation).

Ioanna Gemou, Evangelos Lamprou, Seong-Heon Jung, Nikos Vasilakis, *A Shell-Native Library for Machine Learning Workflows* (To be submitted to HotOS'25).

Ioanna Gemou, Konstantinos Moustakas, Athanasios Lourbopoulos, *Semi-automated, Deep-Learning based Segmentation and Analysis of Mouse-Brain Stroked Tissues*. (In Preparation – Collaboration between VVR Group, GTNR and the Institute for Stroke and Dementia Research).

VOLUNTEER ACTIVITIES

Chairperson

June 2022 – June 2023

IEEE Student Branch-University of Patras

Responsible for organizing educational activities, and overseeing scientific groups and committees (Total members: 50).

Received the IEEE Exemplary Student Branch Award for the 2022-2023 academic year.

Biomedical Engineering Scientific Group Coordinator

Oct 2022 – June 2023

IEEE Student Branch-University of Patras

Coordinated weekly educational meetings on technical topics such as machine learning and its applications in the biomedical field.

Coordinating individual projects for a team of 10 students.

LANGUAGES

Greek – native

English – fluent

French, Spanish – beginner

REFERENCES

Nikos Vasilakis

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Brown University
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Konstantinos Moustakas

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