

IOANNA GEMOU

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EDUCATION

MSc in Biomedical Engineering – 120 ECTS Sep 2023 – Jul 2025
Technical University of Denmark, Copenhagen, Denmark

MEng in Electrical & Computer Engineering – 300 ECTS Oct 2018 – Aug 2023
University of Patras, Greece

- Thesis: Semi-automated, Machine-learning-based Segmentation and Analysis of Mouse-Brain Stroked Tissues.
- **Advisor:** Prof. Konstantinos Moustakas

EXPERIENCE

Brown University Aug 2024 – Feb 2025
Visiting Research Fellow, Advisors: Profs. Ritambhara Singh, Nikos Vasilakis
Providence, RI, USA

- Developing a method for drug interaction prediction by integrating Graph Neural Networks and Large Language Models.
- Building a composable utility library for Machine Learning.
- Contributing to an Ancient Egyptian Hieroglyph Digitization initiative.

Radiometer Medical A/S Aug 2023 – Aug 2024
Electronics & Software Engineer (Part-time)
Copenhagen, Denmark

- Responsible for performing hardware and software tests on medical devices.

University of Athens, Group of Translational Neurology Research (GTNR) Dec 2022 – May 2024
Research Assistant
Athens, Greece

- 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 Sep 2022 – Dec 2022
Data Science Intern
Athens, Greece

- 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) June 2022 – Aug 2022
Software Engineer Intern
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
Programming Instructor
Patras, Greece

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

AWARDS

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

Brain Computer Interfaces

Spring 2024

Technical University of Denmark, Supervisor: Prof. Sadasivan Puthusserypady

- **EEG-to-Text Translation:** Using LLMs to translate EEG recordings into natural language. [\[code\]](#)
- **SSVEP Signal Classification in BCIs:** Explored traditional and new deep-learning classification methods for SSVEP signals. [\[code\]](#)

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. Received **honorable mention**. [\[code\]](#)

Drug Formulation Problem

Spring 2023

University of Patras, Supervisor: Prof. Sofia Daskalaki

- Developed a solution for the drug formulation problem using linear programming techniques. [\[code\]](#)

Identifying Parkinson's Disease through Speech Analysis

Fall 2022

University of Patras, Supervisor: Prof. Kalliopi Dalakleidi

- Analyzing tabular data to identify patterns and markers indicative of Parkinson's Disease. [\[code\]](#)

PUBLICATIONS

Amina Abdullahi, **Ioanna Gemou**, Nihal V. Nayak, Stephen Bach, Ritambhara Singh, *K-Paths: Reasoning over Graph Paths for Drug Repurposing and Drug Interaction Prediction*. (Under Review).

Ioanna Gemou, Konstantinos Moustakas, Athanasios Loubopoulos, *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 meetings on topics such as machine learning and its applications in the biomedical field.
- Supervised individual projects for a team of 10 students.

Head of PR

Oct 2021 – Sep 2022

[IEEE Student Branch-University of Patras](#)

- Responsible for Public Relations and communication with external organizations.

LANGUAGES

Greek – native

English – fluent

French, Spanish – beginner

REFERENCES

Prof. Ritambhara Singh

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Prof. Nikos Vasilakis

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