

# Ioanna Gemou

+30 6940408283 ◊ [ioannagemou@gmail.com](mailto:ioannagemou@gmail.com) ◊ [Website](#) ◊ [GitHub](#) ◊ [LinkedIn](#)

## EDUCATION

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### MSc in Biomedical Engineering

Technical University of Denmark

Aug 2023 – Jul 2025

### MEng in Electrical & Computer Engineering

University of Patras, Greece

Oct 2018 – Jul 2023

**Overall GPA:** 7.65/10 (Graduated 15th/350, part of the 2.5% of students that graduated on time)

**Major GPA:** 8.79/10

**Specialization:** Computer Science

## EXPERIENCE

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### Radiometer Medical A/S

Electronics & Software Engineer (Part-time)

September 2023 – ongoing

Responsible for performing hardware and software tests on medical devices.

### Group of Translational Neurology Research (GTNR)-NKUA

Research Assistant

October 2022 – ongoing

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

### VVR Group-University of Patras

Research Assistant

Spring 2023

Project: Personalised knee geometry modeling based on multi-atlas segmentation.

### EnzyCeuticals PA

Data Science Intern

September 2022 – December 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 – August 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

## SELECTED PROJECTS

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### EEG-to-Text translation

ongoing

Exploring the use of Large Language Models (LLMs) for interpreting EEG data to address the challenges associated with silent speech communication.

### SSVEP Signals 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)

## Solar System Simulator

January 2022

*University of Patras*

Built a solar system simulator using C++ & OpenGL. [\[code\]](#)

(Course: Graphics & Virtual Reality, Prof. Konstantinos Moustakas)

## ACHIEVEMENTS

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### 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 the 24h competition.

Placed globally at the top 4% among 6373 teams.

## PUBLICATIONS

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2024

"Semi-automated, deep-learning based Segmentation and Analysis of Mouse Brain Stroked Tissues." (In Preparation)

Collaboration between [VVR Group](#), [GTNR](#) and [Institute for Stroke and Dementia Research](#).

## VOLUNTEER ACTIVITIES

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### Chairperson

June 2022 – June 2023

*IEEE Student Branch-University of Patras*

Organising educational activities, overseeing scientific groups and committees. Over 50 active members and more than 15 activities organized during my mandate.

### Biomedical Engineering Scientific Group Coordinator

October 2022 – June 2023

*IEEE Student Branch-University of Patras*

Giving weekly lectures on topics such as Machine/Deep Learning and their applications in the biomedical field.

Coordinating individual projects for a team of over fifteen (15) students.

### Head of PR

October 2021 – September 2022

*IEEE Student Branch-University of Patras*

Responsible for Public Relations and social media management.

## SKILLS

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Proficient in Python, R, and Matlab with a solid foundation in C/C++.

Expertise in version control systems.

Experience with machine learning and deep learning frameworks.

Confident in Linux/Unix environments with knowledge of bash scripting.

## LANGUAGES

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Greek (native speaker), English (fluent), German (beginner), French (beginner)

## REFERENCES

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1. Konstantinos Moustakas, Electrical and Computer Engineer, PhD  
Professor, Electrical and Computer Engineering Department, University of Patras  
e-mail: [moustakas@ece.upatras.gr](mailto:moustakas@ece.upatras.gr)
2. Dr. Athanasios Loubopoulos, MD, MSc, PhD  
Neurologist, Schön Klinik Bad Aibling, Munich Germany  
Visiting Professor, Department of Pharmacology - Medical School, University of Athens, Greece  
e-mail: [aloubop@gmail.com](mailto:aloubop@gmail.com)