Dimitrios Pantelaios

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EDUCATION

National Technical University of Athens(NTUA), Athens, Greece *2018-2023*
BSc & MSc in Electrical and Computer Engineering (5-year joint degree; 300 ECTS)
Grade: **9.42/10 (top 2%)**
Concentration: Computer Science
Relevant Coursework

- Pattern Recognition: 9/10
- Neural Networks and Intelligent Systems: 10/10
- Artificial Intelligence: 9/10
- Biomedical Signal Analysis and Processing: 10/10

Thesis: "Medical Image Classification using Hybrid CNN-ViT models"
Supervisor: Stefanos Kollias

Nationwide University Entrance Examination *2018*
Score: **18,944/20,000 (top 1% Nationwide)**,

PROJECTS

Medical Image Classification using Hybrid CNN-ViT models (diploma thesis) *2023*

· Investigated a diverse range of **hybrid CNN-ViT** models in order to enhance the performance and capabilities of the image classification task.
· Applied these carefully selected models on the **COVID-QU-Ex** dataset, a valuable benchmark for evaluating image classification performance in medical imaging and **COVID-19 detection**.
· Compared CNN-ViTs' and simple ViTs' performances when **finetuned** and when trained **from scratch**. In both cases hybrid models achieved better results in terms of accuracy (best model **96.94%**), training time and computational costs.
· Demonstrated enhanced COVID-19 detection capabilities, yielding robust and reliable results.
· Experiments were performed in the **Google Colab** environment and **Pytorch** framework was used for implementation.

IoT Live Streaming (Analysis and Design of Information Systems) *2023*

· Generated real-time virtual data representing sensors' values using **Python**.
· Transmitted data using **Apache Kafka**.
· Transformed sensors' values into daily or other types of conversions using real-time data processing frameworks, such as **Kafka Streams**.
· Stored processed values in a timeseries database (**InfluxDB**).
· Presented data live on Dashboards using **Grafana**.
· **Docker** was used for the implementation.

M-health and E-health Technologies 2022

· Designed a series of **Unity** applications for dealing with real time health control and crisis de-escalation:

Created a breath control application for panic attack management.

Developed a focus and concentration application to deal with anxiety disorder.

Software-as-a-Service Technologies 2022

· Designed a web app-service, which allows users to monitor the prices of electricity in Europe through their browser.
· **NodeJS, ExpressJS, Docker** and **Apache Kafka** were used for implementation.

IOT project at Microprocessors Laboratory 2021

· Collected data through thermal and moisture sensors.
· Processed and transmitted data through intermediate nodes.
· Designed a main node that controls the watering pots in areas that the conditions are appropriate.
· Simulated all nodes by an **AVR** microcontroller.
· Achieved robust communication through **ESPs**.

Software Engineering (tolls interoperability) 2021

· Designed a toll payment system regardless of toll station and provider.
· **Python Flask** framework and **JavaScript** were used for implementation.

SKILLS

Programming Languages & Tools

· Python, Javascript, HTML, CSS, C, C++, Java, SQL, Node.js, Python Flask, PyTorch, MATLAB, VHDL, HLS, ARM assembly, x86 assembly, Prolog
· Docker, Apache Kafka, Kafka Streams, InfluxDB, Grafana, Xilinx Vivado, Atmel AVR, Linux

LANGUAGES

English (fluent), German (basic), Greek (native)