Gerasimos Pefanis

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EDUCATION

09/2022 -11/2024 **Delft University of Technology (TU Delft),** Delft, Netherlands

- MSc in Applied Physics (120 ECTS). Grade: 8/10
- Track: Physics for Health and Life/ Medical Physics.
- Obtained certification of Radiation Protection Expert (Coordinating Expert Level 3/CD).
- MSc Thesis: **"Enhancing CT with a Deep Learning-Based Forward Projection."** (Grade: 8/10)

09/2016 -10/2021 **Aristotle University of Thessaloniki (AUTH),** Thessaloniki, Greece

- BSc in Physics (240 ECTS). Grade: 7.65/10 "Very Good"
- BSc Thesis: **"Magnetic Particle Hyperthermia Optimization with Alternative Protocols"** (Grade: 10/10)

PROFESSIONAL EXPERIENCE

09/2024 – 11/2024 **Intern,** Lake Lucerne Institute (LLUI), Vitznau, Switzerland

- Developed and optimized GCN models for decoding neural states from fMRI data, focusing on architecture design, preprocessing, and hyperparameter tuning.
- Processed and analyzed fMRI data, including parcellation, denoising, and graph construction for deep learning pipelines.
- Conducted MRI experiments, including participant setup, data collection, and experimental procedures to generate fMRI datasets.

10/2023 -07/2024 **MSc Student Researcher (MSc Thesis)**, Medical Physics and Technology lab (TUDelft), Delft, Netherlands

- Simulated training datasets using GATE (GEANT4 Application for Tomographic Emission), accurately modeling X-ray transport with Monte Carlo methods.
- Trained a state-of-the-art Transformer-based neural network for forward projection in medical imaging.
- Developed a model-based iterative reconstruction algorithm that integrates the Transformer-based forward projection model.

09/2023 – 01/2024 **Teaching Assistant**, Delft University of Technology (TU Delft), Delft, Netherlands

- "Physics 2" - Nanobiology BSc/ "Quantum Physics" – minor in Quantum Science and Quantum Information program.
- Assisting students with weekly exercise sessions/ Giving feedback/ Contributing to the creation of examination materials/ Grading exams.

01/2021 – 10/2021 **BSc Student Researcher (BSc Thesis)**, Magna Charta (Center for Interdisciplinary Research and Innovation), Thessaloniki, Greece

- Contributed to a team of researchers aiming to mitigate side effects of Magnetic Particle Hyperthermia.
- Developed MATLAB code to simulate tissue temperature change in Magnetic Particle Hyperthermia.
- Contributed to the design and implementation of a Magnetic Particle Hyperthermia experiment.
- Conducted simulations using COMSOL Multiphysics software.

10/2020 - 11/2020 **Intern,** Theagenio Cancer Hospital, Thessaloniki, Greece

- Assisted in the Nuclear Medicine department.
- Managed patient data for diagnostic procedures.
- Monitored radiation exposure of patients.

OTHER WORK

07/2017 - 08/2024 **Manager,** Yria (Café/ bakery), Paros, Greece

- Summer job (July and August) every year; full-time from October 2021 to September 2022
- Train new and current employees on proper customer service practices. / Organize and supervise shifts. / Order goods and supplies. /Organize marketing activities. / Perform other duties when needed: barista/ cashier/ customer service.

PUBLICATIONS

- Gerasimos Pefanis, Nikolaos Maniotis, Aikaterini-Rafailia Tsiapla, Antonis Makridis, Theodoros Samaras, Mavroeidis Angelakeris. 2022. **"Numerical Simulation of Temperature Variations during the Application of Safety Protocols in Magnetic Particle Hyperthermia"** *Nanomaterials* 12, no. 3: 554. https://doi.org/10.3390/nano12030554

SKILLS

• Programming Languages	**C/C++/ Python/ MATLAB**
• Simulation Software	**COMSOL/ GATE**
• Version Control	**GitHub**
• Operating Systems	**Linux, macOS, Windows**
• Languages	**English (C2-Certified) / Greek (Native)**

PRESENTATIONS

- Poster: **"Magnetic Particle Hyperthermia: Methodologies to mitigate side effects"**, 35th Panhellenic Conference on Solid State Physics and Materials Science, Online, 27/10/2021 – 29/10/2021
- Poster: **"Healthy tissue safety in magnetic particle hyperthermia: A strategy for mitigating eddy currents"**, 4th Spanish Conference on Biomedical Applications of Nanomaterials (SBAN), Online, 02/06/2021 – 04/06/2021

CERTIFICATIONS

- **Radiation Protection Expert (Coordinating Expert Level 3/CD),** Authority for Nuclear Safety and Radiation Protection, Netherlands.
- **Teaching Assistant Training,** Delft University of Technology (TU Delft), Delft, Netherlands.
- **MRI Safety Course,** MR Group of the Institute of Biomedical Engineering, University and ETH Zurich, Switzerland.