

EXPERIENCES

POLADERME

Strasbourg (67218) France

- Cancer lesion classification and segmentation Deep Neural Network pipeline with Transfert Learning **2025**

INSTITUT LUMIERE MATIERE UMR5306 CNRS

Villeurbanne (69100) France

M2 Thesis: DFT Simulation and Neural Network Training

2024

- Created an interactive tool to identify borophene allotropes from experimental STM images, aiming to reduce computational costs (calculation time and CPU usage).
- Used National Research Oriented Computing Clusters CC-IN2P3
- Developed and automated Bash scripts for dataset generation through an organized pipeline.
- Utilized and modified versions of Behler-Parinello Neural Network potentials with the N2P2 package, alongside LAMMPS (Large-scale Atomic/Molecular Massively Parallel Simulator) and VASP (Vienna Ab-Initio Package).
- Programmed machine learning and neural networks in Python using TensorFlow framework.
- Analyzed obtained data and regularly presented results and progress to the research team.
- Strong ability to write reports using LaTeX editors and produce scientific work in English.

INSTITUT LUMIERE MATIERE UMR5306 CNRS

Villeurbanne (69100) France

M1 internship: Photo-thermal deflection spectroscopy and probe laser displacement measurement

2022

- Designed a detector: determined mechanical parameters, selected electronic components, assembled, soldered, and performed initial tests, created electrical schematics using KiCad.
- Set up an optical bench, acquired data via a dedicated card, and processed it in LabVIEW.

TRANSVARO ELECTRON TOOLS

Istanbul(34303) Turkey

Optical R&D Technician

June - August 2021

- Calibrated optoelectronic systems using Infratest software and optical collimators.
- Set up a measurement environment for data acquisition and calculation of: MRTD (Minimum Resolvable Temperature Difference), MTF (Modulation Transfer Function), and NUC (Non-Uniformity Correction).
- Boresight alignment of IR cameras and Laser Range Finders.
- Organized inter-company online conferences to resolve various software bugs.

EDUCATION

UNIVERSITE LYON 1 CLAUDE BERNARD

Villeurbanne (69100) France

Master's Degree in Fundamental and Applied Physics, Optics and Photonics submajor (OPHO)

2022 - 2024

- Optics: Lenses, filters, detectors, spectrometer, geometric and wave optics, Fresnel optics, optical instrumentation, and spectroscopy (Photo-Electron Spectroscopy, HH Generation, TOF-MS, AFM), optical diagram design using Zemax.
- Laser Physics Knowledge: Optical cavity, Gaussian beam, ultrafast optics.
- Quantum and Non-Linear Optics: Optical materials, plasmonic nano-objects.
- Atomic and Molecular Physics: Hyperfine structure, Zeeman effect, magnetic resonance, Raman spectroscopy.
- Biophysics: Microscopy techniques (confocal, STED, SPIM, FRAP, RESOLFT), frequency-domain filtering, cellular migration
- Experimental Skills: Calibration and alignment of components during practical work, scientific experimentation.
- Theoretical Physics Advancement: Condensed matter, quantum mechanics (QM), ab-initio physics, and DFT.
- Electronics: Arduino-based PID temperature controller project.
- Artificial Intelligence for Physics: Supervised ML, unsupervised ML, Deep Learning, Scikit-Learn, TensorFlow frameworks.

UNIVERSITE LYON 1 CLAUDE BERNARD

Villeurbanne (69100) France

Bachelor's Degree in Science, Technology, and Health, Physics major

2016 - 2021

- Physics Knowledge: Quantum Mechanics, Solid/Fluid Physics, Statistical Physics, Thermodynamics, Electromagnetism, Geometric and Wave Optics, Fresnel Coefficient, Polarization, etc.
- Mathematics Knowledge: Hilbert Space, Differential Equations, Linear Algebra, Fourier Theory.
- Electricity Knowledge and Skills: Periodic signal calculations, electronic circuit analysis, transfer functions, behavior of electronic components (diodes, transistors, operational amplifiers, etc.), use of an oscilloscope, etc.

INFORMATIONS ADDITIONNELLES

- Qualities: Organized, Analytical Thinking, Responsible, Autonomous, Teamwork, Interpersonal Skills, Curiosity, Versatile
- Computing: C++, Arduino, Python, TensorFlow, PyTorch, Keras, OpenCV, Bash (Unix shell), LabVIEW, MATLAB, Zemax, KiCad
- Languages: French (Fluent, C1 level), English (TOEIC, 910/990: C1 - reading), Turkish (Fluent, native language), Spanish (DELE A2)

SUMMER/ PART-TIME JOBS

- Volunteer work at Mathematics and Physics Camps (Nesin Mathematics Village, Izmir) **August 2023 & 2024**
- "A Ticket For Your Future" Program by Arçelik/Beko **July 2022**
 - Developed an eco-friendly home appliance concept: "Soapiffy" using the Scrum methodology.
- Language Tutor, MentorÖzelDers.com **January - November 2021**
 - Gave A2-B1 level French lessons in an engaging way (remote work).
- Mini Club G.O., Club Med Palmiye, Antalya **July - August 2018**
- Sailing Instructor, Club Med Palmiye, Antalya **May - June 2017**