Dovan Darazi

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ACADEMIC HISTORY

Lebanese University, Faculty of Sciences II Oct 2021 - Jul 2024

Bachelor of Science in Physics GPA: 3.6 (passing grade 60%)

Rank: first year:1/17; second year:1/3; third year:1/1

Lebanese University, Faculty of Sciences II

Masters of Science in Physics Sept 2024 - Present

Summer schools

The fourth MPFuS Summer 2024

Attended the fourth MPFuS summer school for plasma and fusion physics held in Gammarth, Tunisia.

Online courses (coursera.org):

Particle Physics: An Introduction, From the Big Bang to Dark Energy, Astro 101: Black Holes, Astronomy: Exploring Time and Space, Astrobiology: Exploring Other Worlds, The Science of the Solar System, How to Write and Publish a Scientific Paper

Supplemental studies (books):

Introduction to Electrodynamics by Griffith, Tensor calculus for physics, A first course in general relativity 2E

QUALIFICATIONS AND SKILLS

- Teamwork, Communication, Problem Solving, Time Management, Teaching, People Management
- Python, MATLAB, C++, Rust
- COMSOL Multiphysics, AutoCAD, Latex, Origin Lab, Blender, Inventor, Raspberry Pi
- Knowledge of tools and procedures used in labs and experiments
- Arabic (native), English (fluent), French (francophone)

PROFESSIONAL EXPERIENCE

Research assistant, American University of Beirut (AUB) Sept 2023 – Present

- Project lead on developing a high-speed stereoscopic diagnostics device in order to detect and identify UFOs, Flakes and Dust particles in the plasma flow of a magnetic confinement nuclear fusion reactor. The objective of this project is to determine particles' sizes as well as their positions in three dimensions and their velocities in component form. This data plays a pivotal role in informing the necessary adjustments to the input parameters of the device, enabling us to anticipate and mitigate potential disruptions to the plasma flow with greater precision. As I am writing this, we are in the midst of authoring the corresponding paper.
  Access Project Documents here

Intern, Lebanese American University (LAU) Jul 2023 – Sep 2023

- Assisted in data collection, organization, and analysis for a Research project on the water-energy-food nexus studying the impact of the Lebanese economic and energy crisis on water security. Worked on finalizing the paper for publication.

PUBLICATIONS AND PRESENTATIONS

Publications

- https://doi.org/10.2166/aqua.2024.329

Presentations

- Presented my project on imaging disruptions in magnetic confinement fusion devices at the first MENA region plasma fusion physics (MPFu) conference in Gammarth, Tunisia, as the youngest presenter.

PROJECTS

Developing an Interactive Virtual Assistant Display Mar 2024 – Jun 2024
Open Laboratory, Lebanese University, Faculty of Sciences II, Department of Physics

- Using Blender to develop a 3D interface for the laboratory's virtual assistant and display it on an anamorphic screen, working toward a more advanced projection system to be used for display.

Studying the Barber pole effect in sucrose solution Oct 2023 – Feb 2024
Optics Laboratory Project, Lebanese University, Faculty of Sciences II

- Student project under the supervision of a professor (LBMI, Lebanese University, Faculty of Sciences II). Conducted a series of experiments to observe the barber pole effect and collect experimental data. Data analysis in which the concepts found during the literature review were proved. The team presented the results to the lab professor and other classmates.

Studying and Using a Prism Spectrometer Goniometer Oct 2023 – Jan 2024
Optics Laboratory Course, Lebanese University, Faculty of Sciences II

- Calibrated the non-digital spectrometer Goniometer using a mercury lamp. The calibrated setup was then used to determine the Balmer spectra of hydrogen lamp and Rydberg constant. A theoretical geometrical optical analysis was performed to determine the best fit of the measured data, the results were plotted using python's matplotlib library. The concept studied was modeled using Blender.

The Effects of Photon Energy and Magnetic Fields on the Germination/Growth of Plants Aug 2023 – Oct 2023
Student-led project under the supervision of a professor (LBMI, Lebanese University, Faculty of Sciences II)

- Designed and refined experimental methods for germinating and growing seeds. The seeds were germinated under blue and red light (separately), as well as germinating seeds with and without the presence of a magnetic field, aiming to better understand the quantum processes that take place.

Certifications

- Raspberry Pi Certification from IEEE
- First Aid Certification from Red Cross

EXTRACURRICULAR

Martial arts instructor Oct 2021 – Dec 2023

PROFESSIONAL ASSOCIATIONS

Mario El Tahchi, PhD (Professor at the Lebanese University): mtahchi@ul.edu.lb
Roland Habchi, PhD (Professor and head of the physics department at the Lebanese University): rhabchi@ul.edu.lb
Ghassan Antar, PhD (Professor at the American University of Beirut): ga40@aub.edu.lb
Jimmy Romanos, PhD (Professor at the Lebanese American University): jimmy.romanos@lau.edu.lb