Ralph Razzouk

Website: ralphrazzouk.com
Email: rlphrazz@gmail.com
LinkedIn: linkedin.com/in/ralphrazzouk/
GitHub: github.com/ralphrazzouk
WhatsApp: Click to message

Research Interests

Mathematical physics, high energy theory, quantum gravity, computational physics, quantum field theories, string theory, cosmology, black holes, pulsars, quasars, dark matter, dark energy, quantum biology, quantum computing, quantum information theory, quantum algorithms and complexity, machine and deep learning, artificial intelligence, big data.

Education

Purdue University — West Lafayette, IN
Ph.D. in Theoretical High-Energy Physics — 2023 – Present

Notre Dame University - Louaize — Zouk Mosbeh, Lebanon
B.Sc. in Mathematics, *Summa Cum Laude*, Advisor: Dr. Roger Nakad, Dean's Honor List — 2020 – 2023

Notre Dame College of Louaize — Zouk Mosbeh, Lebanon
Lebanese Baccalaureate in General Sciences — 2017 – 2020

Experience

Razz — Remote, YouTube
Mathematics, Physics, and Computer Science Videos — 2019 – Present

- Making videos and playlists about topics I find interesting

Purdue University — West Lafayette, IN
Physics Teaching Assistant — August 2023 – Present

SiiRA — Remote, Beirut
Intern in AI Prompting, Front-end, and Back-end Development — June 2023 – August 2023

- Enhancing SiiRA's JobGPT
- Aggregating all AI tools under one database

Notre Dame College of Louaize — Zouk Mosbeh, Lebanon
Middle School and High School Physics Teacher — 2021 – 2022

- Taught mechanics, thermodynamics, electricity, gravitation, optics, etc.
- Taught students in both Lebanese Baccalaureate and American programs

Freelance — Remote
Physics and Mathematics Tutor — 2018 – 2022

- Worked as a physics and mathematics tutor for high school students

Skills

- **Programming:** Python, LaTeX, C++, JavaScript, HTML, CSS, MATLAB, Mathematica, PHP, Laravel, MySQL, ReactJS, ThreeJS, NextJS
- **Software:** Adobe Photoshop, Adobe Illustrator, Adobe After Effects, Adobe Audition, Adobe Premiere, DaVinci Resolve, Blender, Sony Vegas 19.0
- **Familiar OS:** Windows and Linux
- **Soft Skills:** Innovation, detail oriented, problem solving, decision-making, critical thinking, public speaking

Languages

- **English:** Proficient User
  - **Duolingo English Test:** 150/160
  - **TOEFL iBT:** 111/120
- **Arabic:** Proficient User
- **French:** Basic User

Projects

See full list of projects on ralphrazzouk.com/projects

- **NASA Space Apps Challenge** (2022 & 2023)
  Modeling Seismic Activity on the Moon Using Three.js
  Link to Project
- **Black Hole Simulator** (2023) (In Progress)
  Interactive 3D Black Hole Simulator Using Three.js
- **Theorym** (2023) (Under Development)
  Open-Science Platform

Scholarships and Awards

- NASA Space Apps Challenge Global Finalists Honorable Mentions (Team Leader) 2023
- Exceptional Volunteering Certification by Caritas Lebanon 2023
- Notre Dame University - Louaize Honoring Ceremony for success in NASA Space Apps Challenge 2022
- NASA Space Apps Challenge Global Finalists Honorable Mentions (Team Leader) 2022
- Academic Scholarship at Notre Dame University - Louaize 2020 – 2023
- First place in Astronomy Competition at Notre Dame University - Louaize 2019
- Second place in Robotics Competition at Lebanese German University 2019
- First place in Young Entrepreneur Showdown at Notre Dame University - Louaize 2018

Extracurricular Activities

- President of Astronomy Club at Notre Dame University - Louaize 2021 – 2023
  Organized and carried out astronomy activities such as stargazing, movie and quiz nights, observatory visits, and enriched the community with scientific astro knowledge
- Student Member at American Society of Mechanical Engineers (ASME) 2022 – 2023
  Participated in events and competitions, attended seminars/webinars, and helped the executive committee

Research

[1] P. Eid, C. El Helou, P. Mouaikel, and **R. Razzouk**, "AI Prompting", (2 months), Jun. 2023.

[2] P. Eid, C. El Helou, P. Mouaikel, and **R. Razzouk**, "Seismic Activity on the Moon", (1 month), Oct. 2023.

[3] C. Dawra, C. El Helou, P. Mouaikel, and **R. Razzouk**, "Studying Chaotic 3-Body Systems to Propel Spacecraft on Interstellar Trajectories", (2 months), Dec. 2022.

[4] R. Nakad and **R. Razzouk**, "Hybrid Functions and Approaches to Solve Some Fredholm and Volterra Integro-Differential Equations", (1 month), Nov. 2022.