

SHARJEEL AHMAD

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Education

Lahore University of Management Sciences (LUMS)

Sep. 2020 – May 2024

Bachelor of Science in Physics

Lahore, Pakistan

cGPA: **3.75**/4.00 (6th Semester)

Graduate-level courses: *Introduction to Quantum Information Science and Technology*, *Introduction to Quantum Field Theory*, *Quantum Optics*, *Computational Physics*, *Machine Learning in Physics*, *Relativistic Electrodynamics*

Tests Taken: TOEFL iBT - 120/120

Honors & Awards

Dean's Honour List

Fall 2020 – Present

LUMS

- Awarded for maintaining a cGPA greater than 3.6 in each semester

Chandrasekhar Honorific Fellowship

Fall 2022 – Present

LUMS

- Awarded twice for academic excellence in basic science programs across LUMS

50% Merit Scholarship

Fall 2020 – Fall 2022

- Awarded for being in the **Top 10** freshman and sophomore undergraduate students in the LUMS School of Science and Engineering

World Schools Debating Championship

July 2019, 2020

Two time Member of national team

Thailand, Online

- Selected to serve in the **National Team** out of a pool of **300** candidates from all across Pakistan
- Ranked as the **8th Best Speaker in the world** in the English as Second Language Category
- Lead the Pakistan team to the **Quarterfinals** in 2019 and the **Octafinals** in 2020

Highest Achiever Award

May/June 2018

Top in School

The Lahore Alma

- Awarded for obtaining the **best grades in high school** in my CAIE O Level Batch

120% Merit Scholarship

Sep. 2018 – 2020

- Awarded for the entirety of high school A Levels program based on **outstanding academics** and extracurriculars

All Pakistan Junior National Debating Championship

Feb 2017, 2018

Two time Runners Up

Karachi/Lahore, Pakistan

- Reached the **Finals in two consecutive years** amongst **40** competitive teams from across Pakistan

Research & Professional Experience

Senior Year Project

Fall 2023 – Present

Supervisor: Dr Adam Zaman

LUMS

- Currently doing literature review on the **Kubo Formulation**, **Lindblad Master Equations** and **Liouville's Theorem**
- Applying a variation of Kubo Formulation to study the **Time Evolution** of particular **Open Quantum Systems**
- Studying various **Perturbation Theories** which are commonly applied in Open Systems

Directed Research Project

Spring 2023

Supervisor: Dr Adam Zaman

LUMS

- Carried out **literature review** to compile a **Report** on **Linear Response Theory**, and its potential uses in solving Dynamic Quantum Systems

Plastic Detection using Liquid Crystals

Summer 2023 – Present

Research Assistant under Dr Ammar Ahmed

LUMS

- Collaborated with the biology department to utilize the **Nematic Liquid Crystal ‘5CB’** to differentiate various plastics found in the local environment through **Optical Birefringence**
- Submitted a **Presentation** which analyzed the collected data through **Rotational Analysis in a Polarized Microscope** on the plastic samples coated with 5CB
- Currently working on creating a roughness profile of the various plastic samples by taking **2D Fast Fourier Transforms** of the captured images in **MATLAB**

Topological Defects and Photo-lithography in Liquid Crystals

Spring 2021 – Spring 2023

Research Assistant under Dr Ammar Ahmed

LUMS

- Conducted experimental research on **Lyotropic** and **Non-Lyotropic Liquid Crystals** and their applications in bacterial transport
- Employed **Auto-CAD** to generate micropatterns on a UV mask for the **photo-lithography research group** who still use it today

Lahore Grammar School Defence Campus

Oct 2021 – Present

Parliamentary Debates Coach

Lahore, Pakistan

- Hired as a **full-time debates coach** to teach over a **100 high-school students** logical analysis, critical thinking and persuasive speaking
- Assisted the LGS Defence Debates Team in reaching the **Final** of All Pakistan Senior Debating Championship 2022 for the first time in **seven years**

Course Projects

On Approximate Quantum Fourier Transforms and its Applications

Spring 2023

Report and Presentation (PHY 612 - Introduction to Quantum Information Science)

Utilized **Qiskit** (Python) to verify our hypothesis on how Approximate QFTs can reduce **Decoherence**

On the Path Integral Quantization of Scalar, EM and Spinor Fields

Spring 2023

Report and Presentation (PHY 539 - Introduction to Quantum Field Theory)

On Chaos in Simple Chua Circuits

Fall 2022

Report (PHY 300 - Experimental Physics Lab II)

On the Quantum Nature of Light

Fall 2022

Report (PHY 300 - Experimental Physics Lab II)

On Logistical Regression Applied to Potential Diabetics

Spring 2022

Report and Presentation (Math 231 - Statistics)

Leadership & Volunteer Work

Community Service Society - Bloodlink

Fall 2021 – Fall 2022

Volunteer

Lahore, Pakistan

- Introduced a **Digitization Framework** to reduce donor response time and alleviate the need for manual oversight
- Maintained a **24-hour helpline** on designated days, connecting hundreds of patients with blood donors

Pakistan National Debate Team

Jan 2023

Team Selector

Lahore, Pakistan

- Worked with a panel of selectors to choose a 5-person national debate from **over 300 applicants**

LUMS Poker Club

Fall 2021 – Present

Founder & President

LUMS

- Founded the LUMS Poker club, orchestrated regular poker tournaments and events, overseeing all aspects of **event planning**, including logistics, budgeting, and marketing
- Hosted and organized the **LUMS Intra University Poker Tournament** which amassed over **60 players** for 2 consecutive years

Skills & Interests

Skills: C++, Python, MATLAB, LaTeX, Powerpoint

Interests: Public Speaking, Tennis, Mixed Martial Arts, Poker, Fantasy Novels