



# Muhammad Ali Hassan

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• GitHub: <https://github.com/AliHassanMirza1>

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## EDUCATION

**Lahore University of Management Sciences:**

BSc Computer Science: **CGPA: 3.52**

**2021 – 2025**

**Key Courses:** Machine Learning, Distributed Systems, Blockchain, Topics in Internet of Things, Professional Communication Skills, Operating Systems, Principles of Economics, Network Security

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## PROFESSIONAL EXPERIENCES

**Research Assistant, Machine Learning Lab - LUMS**

**Aug 23 – May 24**

- Collaborated with a Machine Learning professor to develop advanced predictive models, significantly contributing to the success of a pioneering research project.
- Analyzed diverse data samples from northern Pakistan, including humidity and historical flood data, to **develop a machine learning model** that predicts flood threats, enhancing early warning systems for local communities.

**Teaching Assistant, Blockchain, CS 100, Discrete Mathematics - LUMS**

**June 22 – Aug 24**

- Engaged large classes of **40 to over 100 students** through interactive lectures and discussions, resulting in improved student engagement.
- Developed tailored tutorials and offered regular office hours for one-on-one support, significantly enhancing student performance.
- **Head TA** for CS100, managed logistics and **mentored 4 junior TAs**, leading to a cohesive team and improved student projects through feedback.

**Peer Advisor - LUMS**

**Aug 23 – May 24**

- Mentored and supported **25 freshmen** by providing guidance and academic advice throughout their first year at the university gaining invaluable insights into peer mentoring, enhancing personal communication and leadership skills.
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## LEADERSHIP & EXTRA CURRICULARS

**E Gaming at LUMS – Co-Founder & General Secretary**

**May 23 – June 24**

The LUMS E-Gaming Society was founded to enhance the gaming culture on campus, managing a vibrant team of **50+ members**.

- Orchestrated two major e-sports events, '**E-sports at LUMS**' and '**Lahore Cup**', attracting a combined attendance of over **500 participants**.
- Successfully secured significant sponsorships that contributed substantially to the society's growth and prominence in the regional e-gaming community.

**SPADES & DANCELUMS – Director Media**

**May 21 – May 24**

- Led the media team in promoting and covering SPADES' and DANCELUMS events, including PSIFI, LUMS' largest annual event, effectively enhancing the event's visibility and engagement and reaching an audience of **over 1,000 people**

**LUMUN – Assistant Committee Director**

**May 23 – May 24**

- Managed a **50-member team**, successfully chaired and led the event to completion, overcame challenges and gained crisis management skills.
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## PROJECTS

**Distributed, Fault-Tolerant Key-Value Store** - Created a distributed key-value data store that is able to reach consensus through Raft, which I also implemented myself - it currently supports both Leader Elections and Log Replication with persistence.

**Security Breach in Battery-less IOT devices** – Experimented with different discharge patterns of Battery-less IOT devices and their intermittent computational patterns. These patterns revealed different apps have different charge/discharge cycles which in turn led us to figure out the algorithm such a device is running, allowing us to exploit their vulnerabilities.

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## HONOURS AND AWARDS

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|---------------------------------------|------------------|
| • Dean's Honor List Award             | <b>2022</b>      |
| • 100% Merit Scholarship in A' levels | <b>2018</b>      |
| • Merit Scholarship in LUMS           | <b>2021-2022</b> |
| • Winner of Ideation Academy          | <b>2023</b>      |
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## SKILLS

**Skills:** C/C++, Python, TypeScript, Golang, Bash, HTML/CSS, Solidity, Arduino-IDE, Haskell

**Interests:** Photography, Gaming, Hiking, Rugby