

# *MS & PhD* **COMPUTER SCIENCE**

**EMPOWERING** EVERY JOURNEY

*Syed Babar Ali School of Science and Engineering*





# SYED BABAR ALI SCHOOL OF SCIENCE AND ENGINEERING (SBASSE)

## *LUMS and SBASSE Fostering a Dynamic Learning Environment*

Founded in 1985 as a not-for-profit, LUMS believes in making quality education accessible while breaking academic, geographic, and socio-economic barriers to enhance students' academic exposure.

SBASSE at LUMS is advancing innovative teaching and impactful research in science and technology. The MS programmes offer rigorous, professional, and research-focused training, with two pathways: MS-by-Coursework or MS-by-Thesis. The PhD programmes prepare students for independent, high-quality research. Key milestones include Coursework, Comprehensive (Qualifying) Exams, Thesis Proposal Defense, at least one article in a peer-reviewed journal, and final PhD Thesis Defense.

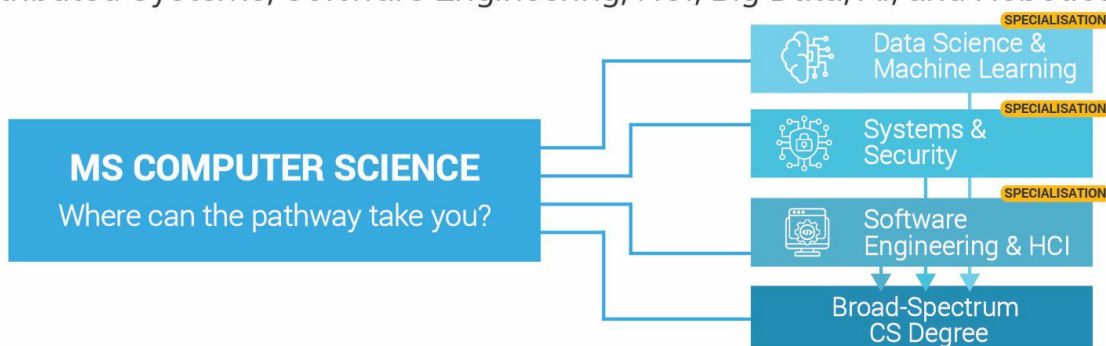
## WHY MS & PHD COMPUTER SCIENCE AT LUMS?

### DEPARTMENT RANKINGS FROM CSRANKINGS.COM\*

- Ranked 1<sup>st</sup> in Pakistan across all categories
- Ranked 53<sup>rd</sup> in the world in the Computer Science Category
- Ranked 6<sup>th</sup> in Asia in the Computer Systems Category

\*This is the widely-used standard for CS department rankings across global universities

The Department of Computer Science comprises faculty with PhDs from Berkeley, Carnegie Mellon, and Stanford, guiding students to stay ahead in evolving tech. Learners gain hands-on expertise in Computer Vision, Data Mining, Networks, Security, Privacy, Distributed Systems, Software Engineering, HCI, Big Data, AI, and Robotics.





# PROGRAMME STRUCTURE

## MATHEMATICS AND PROGRAMMING

DEPTH  
CORE  
(1+1)

- Algorithms
- Applied Probability



**DATA SCIENCE & MACHINE LEARNING**



**SYSTEMS & SECURITY**



**SOFTWARE ENGINEERING & HCI**

BREATH CORE  
(1+1+1)

- Big Data Analytics
- Machine Learning
- Computer Vision Fundamentals
- Intelligent Systems
- Data Learning
- Data Mining

- Networks
- Distributed Systems
- IoT
- Multiagent Systems
- Computer Architecture

- Software Engineering
- Topics in Interactive Computing

ELECTIVES\*  
(1+1+1)

- Foundations of Gen AI
- NLP
- Topic in LLMs

- Topics in Computer and Network Security

- Digital Image Processing

\*One course can be taken from other SBASSE Departments or Schools

- All students must complete 15 credit hours of core courses (Breadth + Depth)
- In addition to the 15 hours of core courses, students opting for MS-by-Coursework must take 15 hours of electives. Students opting for MS-by-Thesis must take 6 credit hours of MS Thesis and 9 credit hours of electives.

## PROMINENT PLACEMENTS

Our graduates ascend to prominent roles, pursuing academics at world-renowned institutions, securing fully funded PhD positions, and driving innovation in leading industries.



**HARVARD**  
UNIVERSITY



**UNIVERSITY OF CAMBRIDGE**

**Carnegie Mellon University**



**Massachusetts Institute of Technology**



**Stanford University**

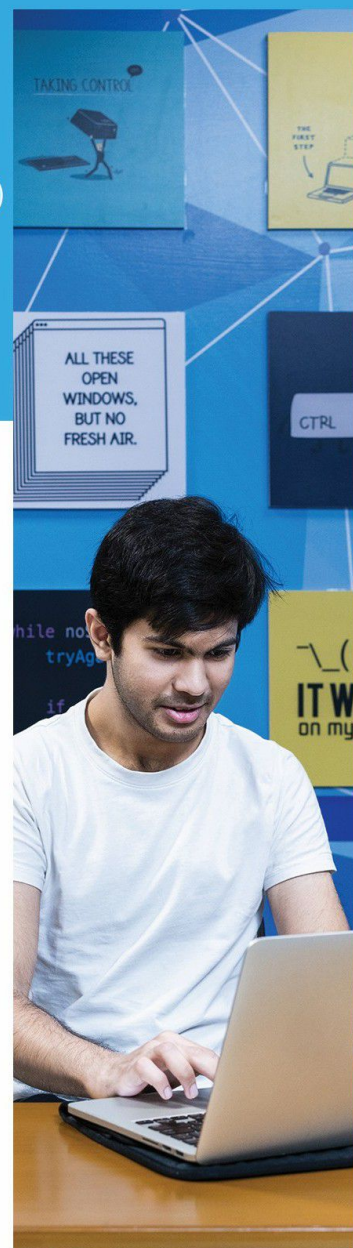


**Google**



**systems**

**Microsoft**





# CAREER PROSPECTS

Our graduates pursue careers as:

- **Software Engineers** in leading tech firms
- **Data Scientists and Machine Learning Specialists**
- **Cybersecurity Analysts and Systems Security Experts**
- **Human-Computer Interaction (HCI) Specialists**
- **Robotics and AI Engineers**
- **Big Data Engineers and Cloud Computing Specialists**
- **Network Architects and Distributed Systems Developers**
- **Software Architects and Product Managers**
- **IT Consultants and Technology Strategists**
- **Academic Researchers and Professors**
- **Innovation Leads** in start-ups and entrepreneurial ventures
- **Research Scientists** in industry labs (AI, Data Science, Systems)
- **Digital Forensics Experts and Privacy Specialists**
- **Professionals** in telecommunications and advanced computing research



“When I joined LUMS, I had no clear direction, but the holistic foundation year let me explore every branch of science, and drew me toward Computer Science. The faculty don't just teach for grades, but instill a deep understanding of the science behind computing. The curriculum was cutting-edge, with a strong emphasis on collaboration. The alumni network is invested in each other's success, creating opportunities in ways that extend far beyond the classroom.”

**MUHAMMAD ABDULLAH**  
MS Computer Science '24  
Data & AI Engineer  
Cascade Debt

## ADMISSION CRITERIA AND FINANCIAL SUPPORT

### ADMISSION IS PURELY MERIT-BASED.

Scan the code to explore eligibility, deadlines, how to apply to the MS Computer Science programme and find out how LUMS can support your academic journey.



PhD Computer Science is a fully funded programme. Scan the code to find out details on how to apply.



### PHD COMPUTER SCIENCE ADMISSION CRITERIA FOR FOREIGN NATIONALS

Foreign nationals must obtain a visa and a no-objection certificate to study at LUMS, with support provided by the university. Applicants from developing countries may also apply via the TWAS–UNESCO portal: <https://rb.gy/j83y7v>. Scan to find out more.



DHA, LAHORE CANTT. 54792, LAHORE, PAKISTAN

© +92-42 111-11-LUMS (5867) Ext: 2177

✉ [admissions@lums.edu.pk](mailto:admissions@lums.edu.pk)

🌐 [www.lums.edu.pk](http://www.lums.edu.pk)

