## CAREER OPPORTUNITIES

Here are some potential career options for graduates of the MS AI programme:

- **Start-ups** based on tools and devices developed as part of their projects or thesis
- **Hospitals, diagnostic labs, and clinical research centres** to improve patient care
- **Regulatory authorities** that develop and enforce regulations
- **Manufacturing industry** to improve product design, manufacturing, and quality control
- **Systems biology** to study complex biological systems
- **Computational tool developers** who develop and deliver software tools for e-health solutions
- **Energy and power sector** to improve energy efficiency and reliability
- **Supply chain management** to optimise supply chains and improve inventory management
- **Database management** to improve database performance and security
- **Hardware design** to design new hardware products and improve the performance of existing hardware products
- **Pursue doctoral studies** in AI and machine learning
- **Digital sustainable agriculture** for decision support in water, soil and pest management, weather forecasting, climate change adaptation, crop yield maximisation, etc.

## ADMISSION CRITERIA

**Admission is purely merit-based and rests solely on the following criteria:**

- Academic Record
- Performance in Admission Test
- Application Review
- Submission of complete online application, application processing fee and supporting documents by the stipulated deadline
- Interview Performance (if shortlisted)
- Letters of Recommendation

**Note:** This is the minimum criteria that applicants need to fulfil in order to be eligible to apply. Fulfilment of this criteria does not guarantee admission to LUMS.

Scan for more information

## DR. MUHAMMAD TAHIR
### ASSOCIATE PROFESSOR

"The MS AI is an innovative programme designed to equip students and professionals with the essential knowledge and skills to excel in today's rapidly evolving data landscape. We aim to establish a nationally distinguished graduate programme by offering a comprehensive curriculum covering theoretical knowledge, practical skills in AI, Machine Learning (ML), and industry-relevant areas with a strong emphasis on problem-solving abilities, while keeping a consideration of societal and ethical complexities. This programme is ideal for students and professionals seeking either to begin or enhance their expertise in AI and ML, providing a solid foundation for diverse career paths in today's data-driven industries."

## FINANCIAL SUPPORT

- LUMS interest-free loan
- Merit scholarships

**LUMS**
A Not-for-Profit University

DHA, LAHORE CANTT. 54792, LAHORE, PAKISTAN
+92-42 111-11-LUMS (5867) Ext: 2177
admissions@lums.edu.pk
www.lums.edu.pk

#LearningWithoutBorders

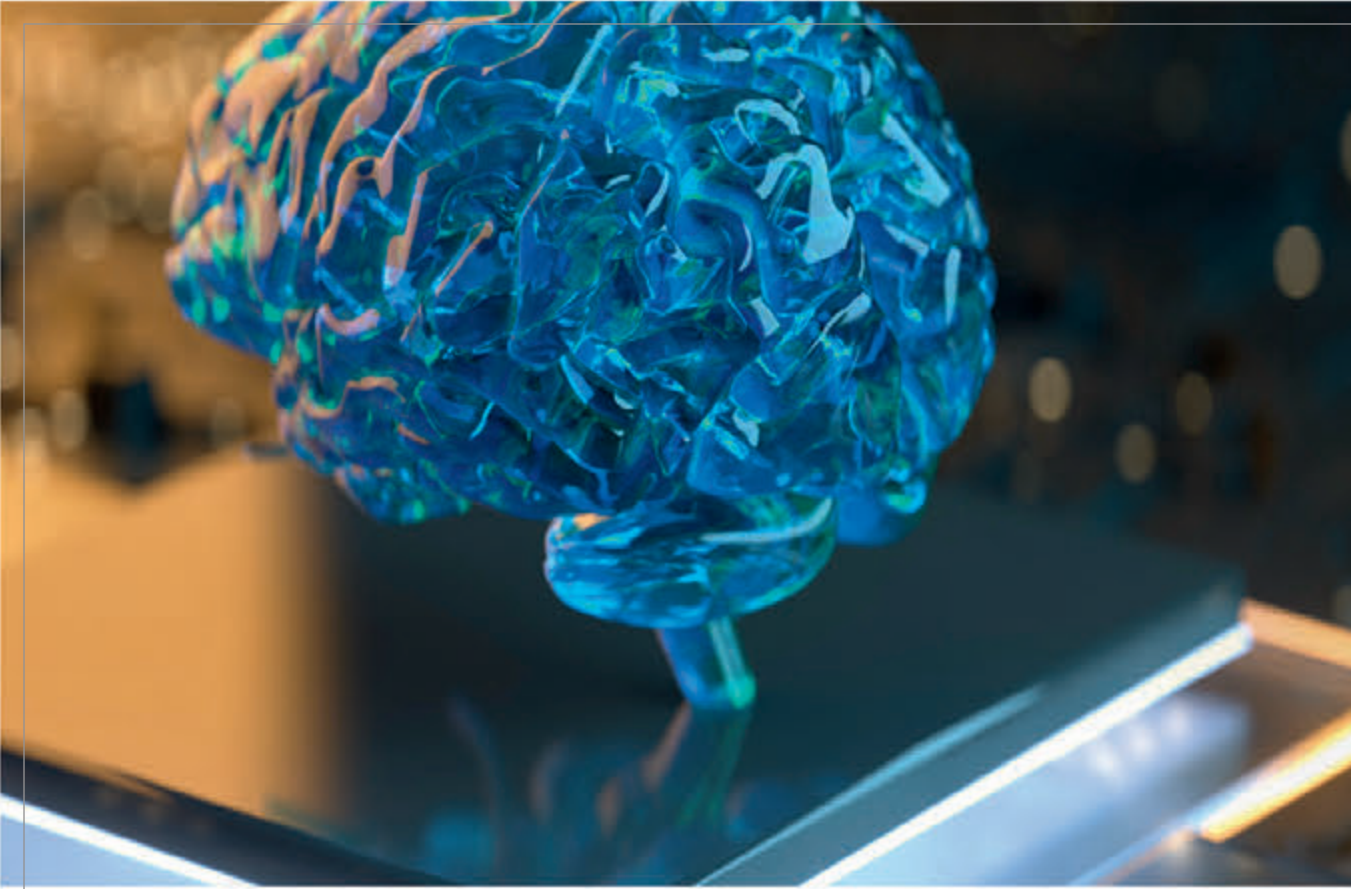**LUMS**
A Not-for-Profit University

Learning Without Borders

# MS ARTIFICIAL INTELLIGENCE
## Syed Babar Ali School of Science and Engineering

وہی جہاں ہے تیرا جس کو تو کرے پیدا

علامہ اقبال

## PROGRAMME **HIGHLIGHTS**

- Evening programme
- 5 full 100% merit scholarships (tuition waiver)
- Research Assistant (RA) or
  Teaching Assistant (TA) opportunities
- LUMS financial aid
- World-class faculty
- Multidisciplinary environment
- Top quality research

Collaborative engagement with industry and academia on real-world challenges is a cornerstone of the programme along with an emphasis and appreciation for the boundaries of Artificial Intelligence (AI) and Machine Learning (ML) technologies, keeping in mind the associated societal and ethical complexities. The programme's learning outcomes encompass various facets, including:

- Mathematical and statistical foundations
- Computational underpinnings
- Data management, visualisation, and modelling
- Domain-specific considerations
- Ethical guidelines for AI/ML
- Data models deployment strategies
- Effective communication and teamwork

# WHY MS ARTIFICIAL INTELLIGENCE AT LUMS?

# SYED BABAR ALI
## SCHOOL OF SCIENCE AND ENGINEERING

Founded in 1985 as a not-for-profit, LUMS has pioneered innovative educational trends. The expanse of research and teaching at LUMS offers its community 'Learning without Borders' by breaking academic, geographic, and socio-economic barriers to enhance students' academic exposure and make education accessible to all.

Syed Babar Ali School of Science and Engineering (SBASSE) at LUMS is making significant strides in the experimentation of teaching and learning, and making impactful contributions to science and technology. The MS programmes at SBASSE are rigorous and designed to impart specialised professional and research-oriented training to students. All SBASSE departments offer at least two options to choose from: MS-by-Coursework or MS-by-Thesis.

## LUMS AND SBASSE FOSTER A DYNAMIC LEARNING ENVIRONMENT

### QS WORLD UNIVERSITY RANKINGS BY SUBJECT

**#301-350**
Computer Science and
Information Systems

**#351-400**
Engineering – Electrical and
Electronics

**#401-450**
Engineering and Technology

**#501-550**
Physics and Astronomy

The MS Artificial Intelligence (AI) programme at LUMS has been crafted with a vision of establishing a nationally distinguished graduate programme in the field. It focuses on nurturing graduate students by imparting both theoretical knowledge and practical skills in the broad areas of Artificial Intelligence and Machine Learning. The programme aims to equip students with robust problem-solving abilities, fundamentals and domain-specific knowledge, along with tangible data handling and manipulation skills, which are applicable across diverse domains.

# PROGRAMME
STRUCTURE

The MS Artificial Intelligence programme requires a total of 30 credit hours for completion. There are two programme structures available:

### THESIS OPTION

In the thesis option, students will take 8 courses (3 credit hours each), totalling 24 credit hours, and complete an MS thesis worth 6 credit hours. The MS thesis is divided into two components, MS Thesis I and II, worth 3 credit hours each.

### NON-THESIS OPTION

In the non-thesis option, students will take 9 courses (3 credit hours each), totalling 27 credit hours, and undertake a capstone project worth 3 credit hours. The remaining 3 credit hours will be fulfilled by specialised courses.

This programme offers students the flexibility to build on its required core courses with electives from an exhaustive list to tailor their degree experience that reflects their interests, strengths, and career goal. Our faculty members are deeply involved in various AI domains, and to align with their expertise, we have introduced distinct AI specialisations. These specialisations feature elective courses meticulously crafted for the unique interests of students in AI in each specialised field:

- Hardware
- Sustainability
- Health and Biomedical Imaging
- Energy and Power Systems

- Robotics
- Society
- Natural Language and Speech
- Operations/Supply Chain Management