



MASTER OF SCIENCE | COMPUTER SCIENCE

Targeting new audiences, an entertainment company merges on-demand streaming with social media to create virtual drive-ins, where hundreds of thousands of visitors can watch the same movie while interacting in real time with each other and site advertisers.

To reduce risk and enhance return, an investment firm develops a trading program that uses AI to analyze big-data sets from diverse social and economic sectors in order to spot emerging trends and novel market indicators.

To identify the leaders of a criminal organization, law enforcement agency computers utilize an algorithm that tracks the spread of a 'contagion' eluding sleuths from users back to sources.

The rise of computing technology in every facet of life has been nothing short of revolutionary. And its growth is still accelerating. Virtually every sector of our economy depends on the advancement of computing technology, from ever more capable handheld devices to the incredible potential of direct interface between human and artificial neural nets. Such is the world and the work awaiting those with a master's in computer science from SMU-Lyle.

FIND US **HERE**

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COMPUTING REVOLUTION

ACADEMIC PROGRAM

Requirements include the completion of ten graduate level courses (30 CH), or the completion of eight courses (24 CH) and a thesis.

Core Courses (12 CH).

Algorithm Engineering
Computer Architecture
Computer Science Seminar
File Organization and Database Management
Operating Systems and Systems Software

Concentration in one of the following areas (6 CH).

Algorithms

Algorithms II
Computer Arithmetic
Graph Theory: Algorithms and Applications
VLSI Algorithms

Architecture

Advanced Computer Architecture
Fault-Tolerant Computing
Parallel and Distributed Processing
Switching Theory and Applications in VLSI CAD
VLSI Algorithms

Software

Advanced Application Programming
Object-Oriented Analysis and Design Methodology
Software Architecture and Design
Software Testing and Quality Assurance
User Interface Design

Data Science

Information Retrieval and Web Search
Information Storage and Retrieval
Introduction to Data Mining and Related Topics
Mobile Applications for Sensing and Learning
Security Economics
XML and the Enterprise

Security

Advanced Network Security
Advanced Software Security
Computer System Security
Cryptography and Data Security
Data and Network Security
Hardware Security and Trojan Detection
Security Economics
Software Security

All students must complete 12 credit hours (CH) of elective courses. For a full listing, please refer to graduate catalog.

DIGITAL INTEGRATION

Both in the use of computers and in their conception, computer science is about solving problems. Touching on every facet of computer technology—from researching fundamental principles of language and architecture to overseeing the development of large-scale integrated systems—Lyle's master's in computer science program is designed to accommodate students with different interests in this all-encompassing field. In its 30-hour sequence, students explore core subjects like algorithm engineering, computer architecture, and software design, then choose an area of specialization for concentration. They further enrich their program with advanced electives ranging from language theory and applications, knowledge-intensive problem solving, cryptography and data security, VLSI algorithms to other challenging topics. Graduates emerge uniquely prepared to push the boundaries of computing technology, to hold positions of leadership in this essential industry, or to further extend their studies toward a Ph.D. in computer science.

DIRECT INTERFACE

The master's in computer science curriculum at SMU-Lyle is presented by an exceptionally qualified faculty whose own research projects—in databases and data mining, hardware algorithms, electronic design automation, computer graphics, cybersecurity, net-centric software solutions, and high-assurance computing, to name only a few—point to the future of computing technology. Courses are offered in small classes to ensure optimal opportunities for personal mentoring, strong teamwork and individual creativity, leading to the highest levels of professional achievement and personal satisfaction.