



GRADUATE STUDIES

Software Engineering



JOIN OUR COMMUNITY OF SCHOLARSHIP AND RESEARCH

The Department of Computing Sciences graduate programs are designed for people who wish to update their skills and advance their careers as computing professionals, or for students who wish to complete a master's degree and matriculate to a doctoral degree at another university.

MASTER OF SCIENCE IN SOFTWARE ENGINEERING

The MS in Software Engineering is designed to address the increased interest in advanced computing education specifically directed to the ability to specify, design, develop and maintain software systems. This degree program:

- Prepares students for a career in software engineering or for advanced study in the field
- Is frequently viewed by industry as a minimum requirement for leadership in the field of software engineering
- Provides practical and theoretical knowledge and experience
- Includes courses on software design and evolution, database systems, user/system interface design, and others

IMMERSIVE TECHNOLOGY AND RESEARCH FACILITIES

Our National Science Foundation-funded virtual reality CAVE facility uses immersive video for telepresence applications as well as:

- Computer-generated graphics for 3D visualization
- Object capture facilities
- AR/MR/VR application development
- 3D printing facility

WHAT OUR STUDENTS SAY

"During my Research Assistantship, I worked to help develop Villanova's CAVE facility. I not only learned about virtual reality technology and developed software, I helped other students and faculty develop scenes for use in the CAVE. It was motivating for me to develop skills that are in high demand." —Andrew Grace '17 MS



EXPLORE OUR CURRICULUM

A complete listing of courses, degree and certificate offerings is available at csc.villanova.edu. Recent course offerings include:

- Cybersecurity
- Machine Learning
- Deep Learning
- Game Development
- Text Mining
- Cloud Computing
- Digital Forensics
- Information Security
- DevOps Tools & Techniques
- Containers & Microservices
- Internet of Things
- Software Studio
- Project Management
- Software Quality Assurance
- Health IT & eHealth Systems

DISTINGUISHED FACULTY

All full-time faculty have doctoral degrees in computing science or a related field, and are joined by qualified adjunct faculty who bring the perspective of current industry trends.

Research Areas

Artificial Intelligence

- Text Mining
- Computer Vision
- Machine Learning

Database Systems

- Data Modeling
- Data Mining
- Big Data Analytics

Distributed Systems and Networks

- Cloud Computing
- Wireless Networks

Graphics and Immersive Systems

- Computer Graphics
- Virtual Reality
- Game Design and Applications

Information Systems

- Digital Libraries
- Visualization
- Multimedia
- Ontologies
- Semantic Web

Programming Languages and Implementations

- Compiler Optimization
- Nanocompilers

Software Engineering

- Human-Computer Interaction
- Object-oriented Modeling
- Security, Privacy and Ethics
- Software Process Improvement

Systems Modeling and Simulation

- System of Systems
- Colored Petri Nets
- Process Modeling

Theory

- Algorithms
- Computational Geometry
- Computability
- Logic

FOR MORE INFORMATION OR TO APPLY:

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