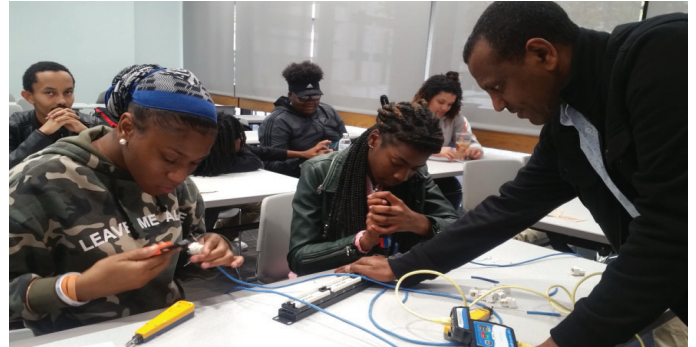


# M.S. in COMPUTER SCIENCE



## MASTER OF SCIENCE in COMPUTER SCIENCE

Looking for professional advancement in Computer Science? Interested in staying abreast of its fast-moving development? Would you like to stay competitive in today's job market? Join our MSCS program at UDC! Our graduate faculty members are enthusiastic researchers as well as passionate teachers. You will learn state-of-the-art technology, and also conduct research in diverse areas solving real-world problems. You will be encouraged and guided to reach your highest potential. We teach, we mentor, and we care! You succeed!

UDC's Master of Science degree program in Computer Science (MSCS) is tailored to meet the needs of working professionals. Its curriculum integrates cutting-edge research activities, and provides students with knowledge and skills to solve real-world problems. Most classes are in the evening or late afternoon. After completion, our students can pursue a PhD degree or a career in industry, government, non-profits or academia. The program also caters to traditional students who wish to advance beyond their BS degree in Computer Science, or closely related disciplines.

The program offers a thesis option and a non-thesis option. Students in both options must take four graduate computer science (CS) core courses. Students who wish to write a thesis need to take four graduate CS electives

and sign up for a minimum of six thesis credits (counts as two graduate electives), whereas students in the non-thesis option must take six graduate CS electives, one of which must be CSCI 599 Master's Project. Students enrolled in the thesis option will need to do a thesis defense. Thesis defenses need to be announced to students and faculty in the college at least a week prior to the thesis defense date. Students who elect to do a project (non-thesis option) must consult with their project advisor on project submission requirements.

### Your total 30-credit-hour curriculum consists of:

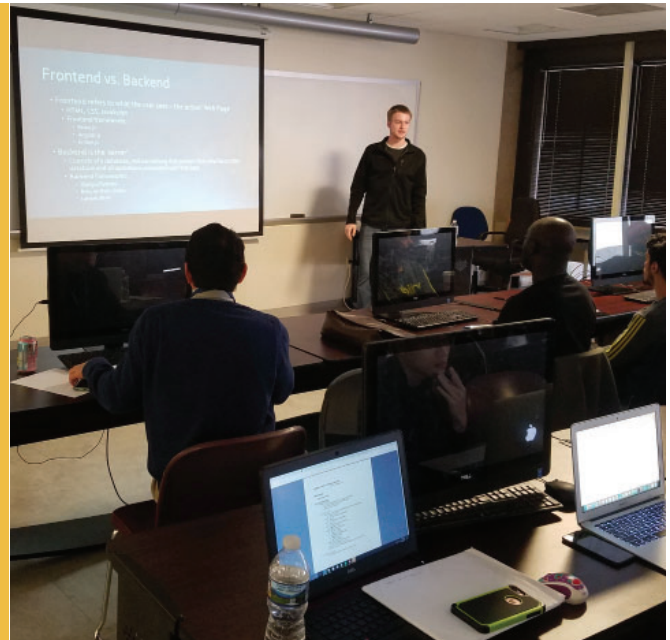
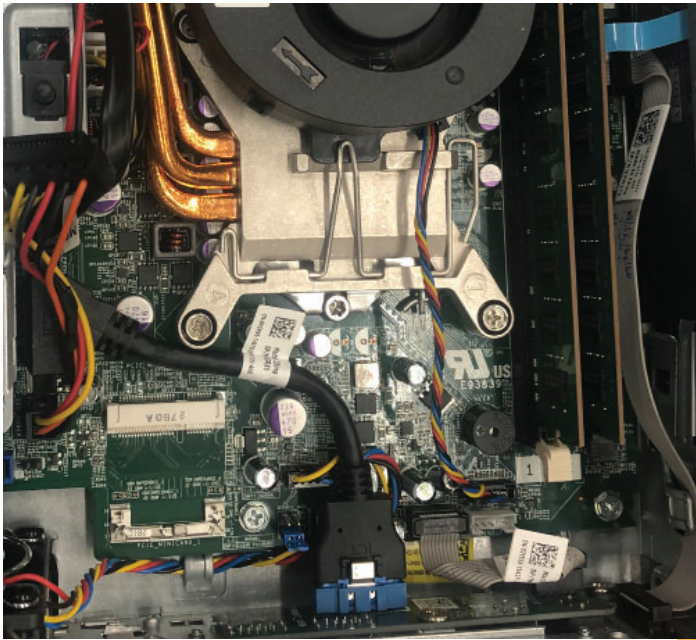
Core courses .....12

Electives .....18

In addition, students who do not have an undergraduate BSCS or a degree in a related discipline will be required to take additional background coursework in computer science. For details of these background courses, students need to have a consultation with the graduate program director.

### **WHY MASTER'S IN COMPUTER SCIENCE AT UDC?**

- Student-focused campus mission
- Affordable and accessible
- Covers a wide range of CS topics
- Average class size is around 10 or less
- Lower tuition fees compared to other schools
- High success rate in becoming a computer science professionals
- Research and Scholarship opportunities
- Convenient to Metropolitan DC Area residents



**What makes UDC Computer Science Master's program different?**  
The Computer Science master's program at UDC is designed with success of the individual student in mind. With smaller class size, students benefit from a personal teaching environment and individual attention.

#### **How will my credits transfer?**

Once you are enrolled, you need to contact the graduate program director in the department for possible course transfer. UDC accepts academic coursework (up to nine credit hours) from regionally accredited colleges and universities.

#### **May I speak to a current UDC student?**

Contact the graduate program director to be connected with a continuing or recently graduated student who will share their experience with you.

*"I couldn't have done it without the great resources and opportunities provided to me at UDC. UDC has been a great place to do undergraduate work and I hope this award is an indicator of that reality.*

*~ NATHAN KEEGAN. A recipient of the Boren Fellowship*

*MS Computer Science / Class of 2015*

*For more information about MS in the Computer Science visit [www.udc.edu/seas](http://www.udc.edu/seas) or contact:*

*Department Chair, Dr. Briana Wellman  
202-274-6695, [briana.wellman@udc.edu](mailto:briana.wellman@udc.edu)*

*Program Director, Dr. Lily Liang  
202-274-5086, [liliang@udc.edu](mailto:liliang@udc.edu)*

*Department Office, Ms. Sandra Brooks  
202-274-6287, [sbrooks@udc.edu](mailto:sbrooks@udc.edu)*

## Master of Science in Computer Science

### Graduation Requirements

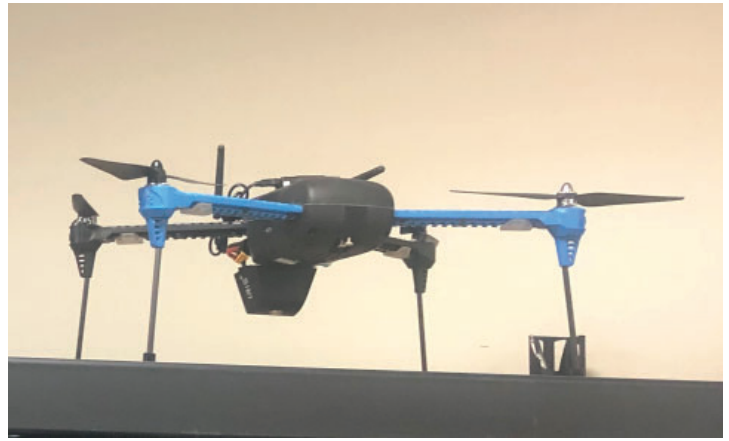
Students must successfully complete a minimum of 30 graduate credit hours (10 courses) in computer science with a grade of B or better in each of the courses. Students receiving grades lower than a B in any course will have to retake the course.

Students must complete all program requirements within six years of their initial enrollment in the program.

### Core Courses

Students must take at least four (12 credits) of the core courses.

CSCI 504 Design & Anal Algorithms  
CSCI 505 Foundations of Computer Arch  
CSCI 506 Prin of Operating Systems  
CSCI 507 Prin of Database Systems  
CSCI 508 Data Communications Network  
CSCI 509 Found of Software Engr  
CSCI 510 Prin of Artificial Intelligence



### Thesis and Non-thesis Options

Students, who choose the thesis option, need to take four graduate CS electives (12-cr hours) and 6 thesis credit hours (counts as two graduate electives of CSCI 600). Students must have a thesis advisor.

Students in the non-thesis option must take five graduate (15-cr hours) CS electives and one master's project course (CSCI 599 Master's Project). Students in the non-thesis option, but wishing to do a special project as part of their Master's program (CSCI-599), need to find a faculty member project supervisor.

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### Elective Courses

CSCI 511 Automata Theory and Formal Languages  
CSCI 512 Computational Complexity  
CSCI 513 Parallel Algorithms  
CSCI 518 Special Topics in Theoretical Computer Sci  
CSCI 521 Advanced Computer Architectures  
CSCI 522 Advanced Operating Systems  
CSCI 523 Advanced Database Systems  
CSCI 524 Human-Computer Interfaces  
CSCI 525 Compiler Design  
CSCI 531 Principles of Computer Graphics  
CSCI 532 Image Processing  
CSCI 533 Computational Geometry  
CSCI 534 Bioinformatics  
CSCI 538 Special Topics in Applications  
CSCI 551 Computer Network Architectures & Protocols  
CSCI 552 Network Programming  
CSCI 553 Network Security  
CSCI 554 Wireless and Mobile Computing  
CSCI 558 Special Topics in Network Security  
CSCI 571 Logic Programming  
CSCI 572 Evolutionary Computing  
CSCI 573 Neural Networks  
CSCI 574 Natural Language Processing  
CSCI 575 Speech-based Computing  
CSCI 578 Special Topics in Intelligent Systems  
CSCI 598 Master's Project  
CSCI 600 Master's Thesis  
CSCI 601 Advanced Algorithm Analysis  
CSCI 602 Theory of Computational Complexity  
CSCI 603 Pattern Recognition  
CSCI 671 Autonomous Mobile Robots  
CSCI 672 Visual Analytics  
CSCI 673 Virtual Reality  
CSCI 674 Advanced Topics in Networking  
CSCI 675 Spatio-Temporal Databases  
CSCI 676 Big Data Science  
CSCI 689 Special Topics in Computer Science

## **FACULTY EXPERTISE**

### **DEPARTMENT OF COMPUTER SCIENCE AND INFORMATION TECHNOLOGY**

#### **Uzma Amir**

Area Robotics, STEM Programs

#### **Li Chen, Ph.D.**

Image Processing, Object-Oriented Programming and Design, Algorithm Design and Complexity, Discrete Geometry and Digital Geometry, Data Science: Theory and Applications

#### **Anteneh Girma, Ph.D.**

Information Security and Assurance, CyberSecurity, CyberSecurity Intelligence, CyberSecurity Governance, Risk Management, and Security Auditing, Cloud Computing and Security, Internet of Things and Security, Artificial Intelligence, Machine Learning, Cryptography, and Data Science

#### **Dong Hyun Jeong, Ph.D.**

Human-Computer Interaction, Visual Analytics, Information Visualization, Cloud Computing

#### **Thabet Kacem, Ph.D.**

Cybersecurity, Smart Transportation Systems, Software-Defined Radios/Radars, Cyber Physical Systems, Sea Level Rise

#### **Junwhan Kim, Ph.D.**

Distributed Systems, Software and Hardware Transactional Memory, Fault Tolerance, Wireless Networking, Cross-Layer Optimization

#### **Lily Liang, Ph.D.**

Digital Image Processing, Artificial Intelligence, Bioinformatics, Data Mining

#### **Timothy Oladunni, Ph.D.**

Data Analysis, Pattern Recognition, Software Engineering, Deep Learning, Business Intelligence, Data Mining

#### **Briana Wellman, Ph.D. (Department Chair)**

Multi-robot System, Educational Robotics, Autonomous Systems

#### **Byunggu Yu, Ph.D.**

Database, Cloud Computing, Big Data, Bigtable, MapReduce, Sensor-Network DB, Information Storage and Retrieval, Spatial Database, Spatio-temporal Database, High-dimensional Database, Indexing, Data Modeling, Operating Systems, Mobile Database, Informatics