

# ARTIFICIAL INTELLIGENCE - M.S.

College of Arts and Sciences  
 Department of Computer Science  
[www.kent.edu/cs](http://www.kent.edu/cs)

## About This Program

The Master of Science in Artificial Intelligence program provides rigorous training in the theory and application of AI, equipping you with the skills to develop intelligent systems that can solve complex problems in a variety of fields. With access to state-of-the-art technology and experienced faculty, you will gain the knowledge and practical experience needed to make an impact in this rapidly growing field. Read more...

## Contact Information

- Program Coordinator: **Arvind Bansal** | [gradinfo@cs.kent.edu](mailto:gradinfo@cs.kent.edu) | 330-672-9047
- Connect with an Admissions Counselor: U.S. Student | International Student

## Program Delivery

- **Delivery:**
  - In person
- **Location:**
  - Kent Campus

## Examples of Possible Careers and Salaries\*

### Computer and information research scientists

- 15.4% much faster than the average
- 32,700 number of jobs
- \$126,830 potential earnings

### Software developers and software quality assurance analysts and testers

- 21.5% much faster than the average
- 1,469,200 number of jobs
- \$110,140 potential earnings

### Data scientists and mathematical science occupations, all other

- 30.9% much faster than the average
- 33,200 number of jobs
- \$98,230 potential earnings

\* Source of occupation titles and labor data comes from the U.S. Bureau of Labor Statistics' Occupational Outlook Handbook. Data comprises projected percent change in employment over the next 10 years; nation-wide employment numbers; and the yearly median wage at which half of the workers in the occupation earned more than that amount and half earned less.

For more information about graduate admissions, visit the graduate admission website. For more information on international admissions, visit the international admission website.

## Admission Requirements

- Bachelor's degree from an accredited college or university
- Minimum 3.000 undergraduate GPA on a 4.000-point scale
- Course Proficiency: Successful course completion of high-level algebra, geometry and calculus (equivalent to MATH 12002, MATH 12003, MATH 21001)<sup>1</sup>
- Official transcript(s)
- GRE scores
- Résumé
- Goal statement
- Two letters of recommendation
- English language proficiency - all international students must provide proof of English language proficiency (unless they meet specific exceptions) by earning one of the following:
  - Minimum 525 TOEFL PBT score
  - Minimum 71 TOEFL IBT score
  - Minimum 74 MELAB score
  - Minimum 6.0 IELTS score
  - Minimum 50 PTE score
  - Minimum 100 Duolingo English score

Highly qualified students lacking preparation in some standard areas may be considered for admission on a case-by-case basis.

<sup>1</sup> Recommended but not required: Successful course completion in computer programming, discrete structures, data structures and abstraction, operating systems, database and computer algorithms (equivalent to CS 13011, CS 13012, CS 23001, CS 23022, CS 33007, CS 33211, CS 46101)

## Application Deadlines

- **Fall Semester**
  - Application deadline: June 15
- **Spring Semester**
  - Application deadline: November 1
- **Summer Term**
  - Application deadline: April 1

*Applications submitted after these deadlines will be considered on a space-available basis.*

## Program Requirements

### Major Requirements

| Code                      | Title   | Credit Hours |
|---------------------------|---|--------------|
| <b>Major Requirements</b> |   |              |
| CS 53302<br>or CS 67302   | ALGORITHMIC ROBOTICS<br>INFORMATION VISUALIZATION | 3            |
| CS 54201                  | ARTIFICIAL INTELLIGENCE                           | 3            |
| CS 54202                  | MACHINE LEARNING AND DEEP LEARNING                | 3            |
| CS 63005                  | ADVANCED DATABASE SYSTEMS DESIGN                  | 3            |
| CS 64201                  | ADVANCED ARTIFICIAL INTELLIGENCE                  | 3            |

Major Electives, choose from the following:

|          |  |
|----------|--|
| CS 53301 | SOFTWARE DEVELOPMENT FOR ROBOTICS          |
| CS 53302 | ALGORITHMIC ROBOTICS                       |
| CS 53303 | INTERNET OF THINGS                         |
| CS 53305 | ADVANCED DIGITAL DESIGN                    |
| CS 53334 | HUMAN-ROBOT INTERACTION                    |
| CS 63015 | DATA MINING TECHNIQUES                     |
| CS 63016 | BIG DATA ANALYTICS                         |
| CS 63017 | BIG DATA MANAGEMENT                        |
| CS 63018 | PROBABILISTIC DATA MANAGEMENT              |
| CS 63100 | COMPUTATIONAL HEALTH INFORMATICS           |
| CS 63306 | EMBEDDED COMPUTING                         |
| CS 64401 | IMAGE PROCESSING                           |
| CS 64402 | MULTIMEDIA SYSTEMS AND BIOMETRICS          |
| CS 65203 | WIRELESS AND MOBILE COMMUNICATION NETWORKS |
| CS 67301 | SCIENTIFIC VISUALIZATION                   |
| CS 67302 | INFORMATION VISUALIZATION                  |

#### Culminating Requirement

|                            |   |
|----------------------------|---|
| Choose from the following: | 6   |
| CS 69099                   | CAPSTONE PROJECT                            |
| CS 69099<br>& CS 69192     | CAPSTONE PROJECT<br>and GRADUATE INTERNSHIP |
| CS 69199                   | THESIS I                                    |

**Minimum Total Credit Hours:** 30

## Progression Requirements

Students should complete a minimum of two required courses and either CS 53302 or CS 67302 before taking elective courses.

Students must maintain a minimum 3.000 GPA. Students earning less than a 3.000 GPA or earning a C grade or lower in two courses will be placed on academic probation.

## Graduation Requirements

| Minimum Major GPA | Minimum Overall GPA |
|-------------------|---------------------|
| 3.000             | 3.000               |

## Program Learning Outcomes

Graduates of this program will be able to:

1. Combine intelligent analytics and automation, human-computer interaction and robotics techniques to optimize and automate transportation, industrial processes and/or healthcare processes.
2. Apply machine learning techniques on big data to predict, classify, data mine and explore patterns.
3. Apply intelligent visualization and Internet-based techniques for smart homes and communities.
4. Perform research, discovery and integration by applying knowledge of artificial intelligence theory and techniques.

## Full Description

The Master of Science degree in Artificial Intelligence prepares students with a focused educational and research environment to develop career paths through necessary learning and training with emerging artificial intelligence technologies and applications to intelligent analytics, smart homes and communities and robotics and automation. Graduates have technical knowledge and research and development skills necessary for

applying artificial intelligence to industry, community and military. These areas include sectors requiring intelligent pattern-analysis of big data such as retail, healthcare, biology, psychology and intelligent human-machine interactions and interfaces.