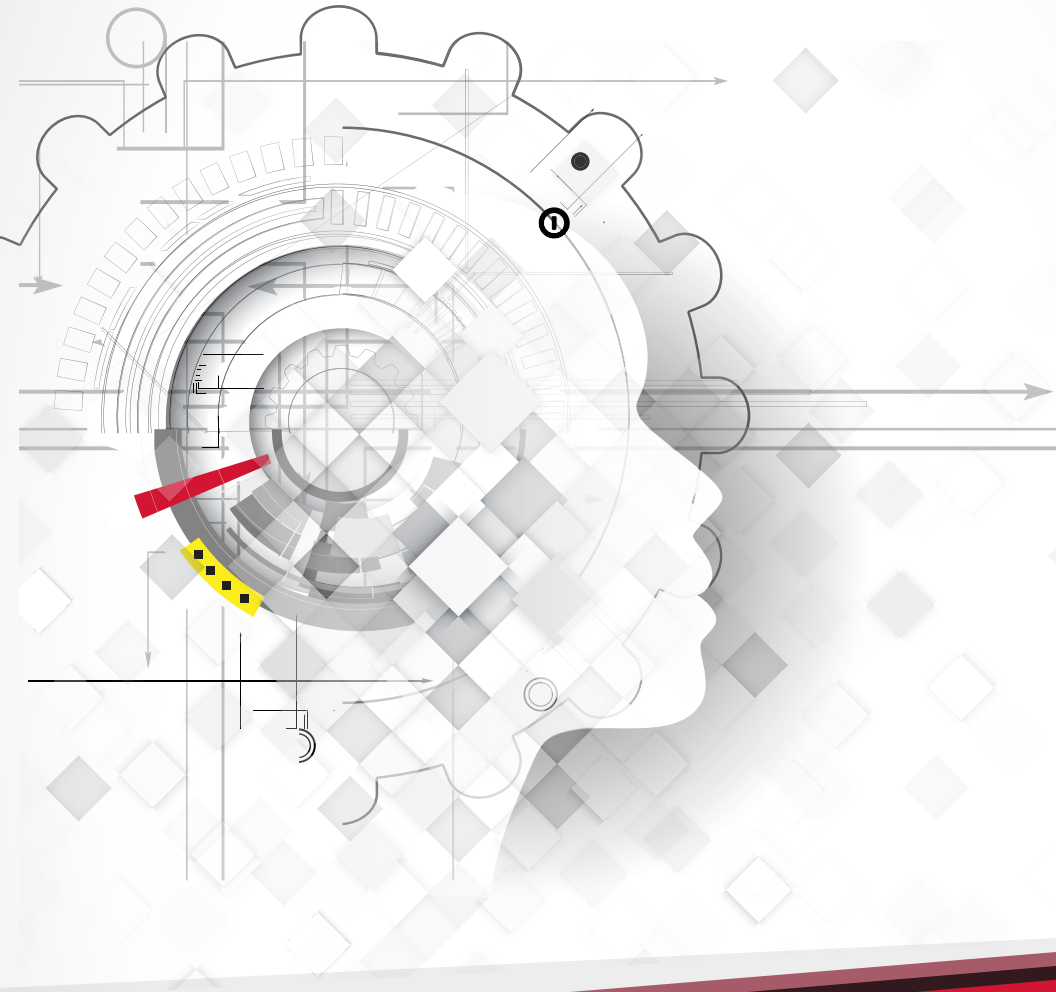


ARTIFICIAL INTELLIGENCE

UNDERGRADUATE AND GRADUATE PROGRAMS

DEPARTMENT OF COMPUTER SCIENCE



UNIVERSITY OF
SOUTH DAKOTA
COLLEGE OF ARTS & SCIENCES

ARTIFICIAL INTELLIGENCE UNDERGRADUATE AND GRADUATE PROGRAMS DEPARTMENT OF COMPUTER SCIENCE



DEPARTMENT OF COMPUTER SCIENCE

USD's Department of Computer Science—the oldest such program in the state of South Dakota—will now offer a specialization and certificate program (undergraduate and graduate) in Artificial Intelligence (AI).

WHEN WILL THE PROGRAMS START?

AI programs at USD will start formally in fall 2021.

WHAT WILL I LEARN FROM THIS PROGRAM?

The AI certificate and specialization focus on the development of AI-driven tools for several different purposes that include machine vision (e.g., robotics), machine learning for big data, data analytics, internet of things and information retrieval, where data include clinical texts, web-based social data (e.g., tweets), robotics and cultural heritage documents. In addition to



the state-of-the-art AI-driven tools, USD is equipped with a high-performance computing center that will be used in the AI courses.

#MachineLearning #Math #ArtificialIntelligence #ComputerVision
#DataScience #InformationRetrieval #HighPerformanceComputing
#BigData #InternetOfThings #InformationSecurity #Algorithms

WHO CAN JOIN THIS PROGRAM?

For the AI certificate program, you are not required to be a computer science major. The AI certificate is not limited to one domain. Students in data analytics with machine learning models, computational chemistry physics, business/finance and health sciences, to name a few, can benefit from these programs. Regardless of the source of data, there is a strong need for AI/data analysts to interpret information, make decisions and visualize output accordingly.

WHAT AM I GOING TO DO AFTER GRADUATION?

According to the Bureau of Labor Statistics, employment of computer and information technology occupations is projected to grow 12% from 2018 to 2028, much faster than the average for all occupations. These occupations are projected to add about 546,200 new jobs in the U.S. Demand for these workers will stem from greater emphasis on cloud computing, the collection and storage of big data and information security, where machine learning—the heart of AI—is employed.

According to the job market, the top five jobs and salaries are:

\$142,859

MACHINE LEARNING ENGINEER

\$126,927

DATA SCIENTIST

\$126,400

COMPUTER VISION ENGINEER

\$126,008

DATA WAREHOUSE ARCHITECT

\$109,313

ALGORITHM ENGINEER

BIRDS-EYE VIEW: DEPARTMENT OF COMPUTER SCIENCE

COMPUTER SCIENCE PROGRAM AND ASSESSMENT

Courses: The computer science program offers state-of-the-art computer science courses such as Artificial Intelligence, Machine Learning, Internet of Things, Data Visualization and Decision Making, Pattern Recognition, Information Storage & Retrieval, High Performance Computing, Algorithms, Game Development, Software Engineering, and Security.

Assessment: The first computer science program in the state of South Dakota is accredited by the Computing Accreditation Commission of ABET, Inc. Since 1913, the Higher Learning Commission of the North Central Association of Colleges and Schools in the USA has accredited the University of South Dakota.

Faculty: Computer science offers award-winning and highly experienced faculty with more than 30 years of teaching experience.

Class size: Our classes are small, with a student/faculty ratio of 10–15 to 1.

Computer science strength: Computer science students (with a faculty member) competed in the Association for Computing Machinery International Collegiate Programming Contest in 2016. Only 50 teams in the world were qualified for this contest and USD was the only team in the region to attend.

Academic clubs: Student clubs, such as Code Club, ACM Club and Network & Security Clubs are mentored and advised by faculty.

RESEARCH ACTIVITIES

Award winning faculty and students: A Department of Computer Science faculty member received the 2019 USD President's Award for Research Excellence and three undergraduate students received awards for research excellence from the Office of Research & Sponsored Programs two years in a row (2019 and 2020). Only 12 candidates are selected each year.

Funded research projects: Students' research projects have been awarded by the Department of Computer Science, the university's competitive grants such as CURCS and Graduate Research & Creative Scholarships and National Science Foundation (NSF): Research for Undergraduates (REU) and Graduate Training Fellowships.

JOB PLACEMENTS

Job market and salary: There is a 98% job placement from both undergraduate and graduate programs. The salary range for national computing jobs are \$70,000–\$80,000 with an undergraduate degree and \$90,000–\$105,000 with a graduate degree. With AI, salaries are geometrically multiplied by a factor of more than one.

Recent jobs: Our recent graduates are working at Tier 1 organizations such as National Institutes of Health, Google, Microsoft, IBM, Sanford Health, Verizon and many software companies.

"The best part about USD is the staff. The majority of them will go above and beyond to help students who are interested. Today I work as a developer programs engineer for Google—a job I would not have gotten had I chose a different school."

—Kurtis Van Gent '15 B.S., '16 M.S., California

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