



Master of Computer Science



PennState
World Campus

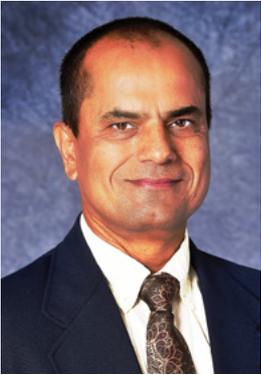
**A world of possibilities.
Online.**

Table of Contents

Master of Computer Science3–5

Begin Your Application Today..... 7

Why Penn State World Campus?.....6



“Penn State’s graduate program in computer science takes a distinctive systems approach, empowering students to master the architecture, design, and development of full-stack AI and machine learning applications; big data solutions; and large-scale, secure, distributed, and cloud-native systems. This program, structured using skill-based concentrations that cater to the dynamic needs of the industry, is built for forward-thinking practitioners ready to transform their careers and lead innovation in today’s rapidly evolving tech landscape.”

— **Dr. Raghu Sangwan**
Director of Engineering Programs
Associate Chief Academic Officer
Professor-in-Charge, Software Engineering





Earn a Master of Computer Science — Online

The 30-credit interdisciplinary Master of Computer Science program is designed for professionals pursuing career advancement, leadership positions, or a transition into a specialized field, enabling them to lead in the tech industry having experienced academic rigor combined with career-focused relevance.

This program aims to equip students with the skills to design, develop, and deploy software systems across various application fields, addressing current social and technical challenges. Graduates can work in diverse positions that require them to collect, compile, and analyze data sets; develop software; design scientific and engineering applications; design and prototype AI systems; or solve computational problems.

Computer Science Curriculum

The program's curriculum will provide you with a comprehensive foundation in computer science fundamentals while allowing you to customize your learning with specialized electives aligned with your career objectives, whether advancing in AI engineering, securing digital infrastructure, or architecting scalable cloud systems.

The courses are highly interactive, focusing on a hands-on approach through project-based learning. Designed to ensure students acquire core knowledge and develop essential skills before focusing on their specific area of expertise, the curriculum ends with a capstone project that showcases their practical application of skills. The capstone culminates your learning, challenging you to solve tangible

industry problems while building a portfolio of demonstrable work.

The curriculum also emphasizes high-demand areas of learning, equipping you with advanced technical skills and strategic problem-solving abilities, including:

- › full-stack development
- › cloud computing
- › data science
- › machine learning

Courses are developed and taught by expert faculty recognized in their fields either through research or industry, allowing for active engagement throughout the program. Additionally, the program encourages peer-to-peer collaboration, linking you to a worldwide network of professionals.



Learning Outcomes

As a successful graduate of this program, you will be prepared to:

- › analyze complex computing problems and design effective solutions using advanced software techniques that address real-world challenges
- › build and implement large-scale, distributed systems for big data and artificial intelligence applications
- › employ strong communication skills to effectively convey technical concepts and development progress, and collaborate with diverse project stakeholders throughout projects
- › evaluate various state-of-the-art techniques to select the most suitable approaches for creating complex software systems, all while understanding and articulating the ethical standards, values, and best practices essential to the computer science profession

Career Opportunities

You can use the knowledge gained from this online program and the support of Penn State career resources to pursue computer science positions in a variety of fields. The following roles are often held by people with this type of degree:

- › AI/Machine Learning Engineer
- › AI Research Scientist
- › Cloud Solutions Architect
- › Director of Software Development
- › Data Engineer
- › Data Scientist
- › Software Engineer
- › Systems Architect
- › Technical Lead



Why Penn State World Campus?

Penn State World Campus is an industry leader in online education, delivering more than 200 undergraduate and graduate degrees and certificates. Our mission is to provide a Penn State education to anyone, anytime — focusing on quality, convenience, and flexibility while delivering high-quality degrees and certificates online.

A reputation of excellence

Putting a Penn State degree or certificate on your résumé is a great way to broaden your career options and prove to employers that you are a well-educated professional.

Flexibility and convenience

Penn State knows that adults need flexible and convenient learning options to continue meeting their professional and personal commitments. You can study when and where you please, earning your credential at your own pace.

Student support services

As a Penn State World Campus student, you will be supported by a team of knowledgeable and caring staff who understand the unique challenges of balancing work and personal responsibilities while learning online. You will have access to traditional student support services, such as 24/7 technical support, career services, and a dedicated student affairs team, along with access to the University Libraries system and the opportunity to join clubs and organizations.

Military and veteran students

We have aligned our online programs, student support services, policies, and procedures to support military personnel, veterans, and military family members.

Learn more at:

worldcampus.psu.edu/MCS

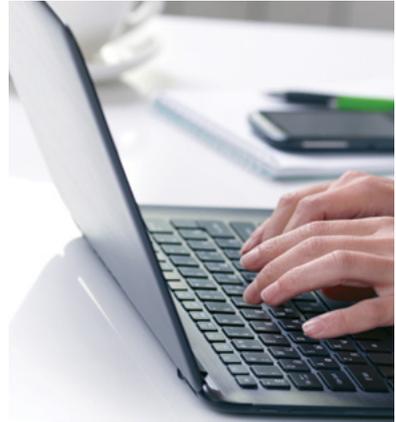


Begin Your Application Today

To apply to our computer science program, visit worldcampus.psu.edu/mcs-apply and click “Apply Now.”

Application Materials

- › application form (completed and submitted online)
- › copy of official transcripts from each undergraduate and graduate institution attended
- › 2 references
- › résumé
- › statement of intent
- › TOEFL or IELTS score, if applicable



For full admission requirements, application deadlines, and up-to-date details about the program and admissions process, visit: worldcampus.psu.edu/admissions

Did You Know?

- › Penn State World Campus is consistently ranked as a top provider of online education by *U.S. News & World Report*.
- › Penn State credits and degrees earned online are identical to those earned on campus.
- › Penn State World Campus has enrolled students from all 50 states and all seven continents.
- › Our online courses involve frequent interactions among students and faculty.



Contact Us

Admissions Questions

worldcampus@psu.edu

Phone: 814-863-5386

worldcampus.psu.edu/admissions

Program Questions

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