

Message from Dean Jamie Payton



At the Ying Wu College of Computing, fostering excellence in computing research and education is at the foundation of everything we do.

Our community of faculty, students and alumni is united by a spirit of exploration, collaboration and innovation. We are committed to pushing the boundaries of what is possible in computer science, artificial intelligence, cybersecurity, informatics and beyond. From groundbreaking research that advances technology to transformative learning experiences that prepare our students for successful careers, everything we do is guided by our mission to make a positive impact on the world through computing. We recognize that technology is not just about algorithms and code — it's about people. It's about using our knowledge and skills to connect communities, enhance quality of life and solve real-world problems.

Our academic programs reflect the wide range of possible paths for making an impact in the field of computing and our curriculum challenges students to expand their technical expertise by incorporating insights from fields like business, engineering, healthcare and more. Our faculty members are internationally recognized research leaders and dedicated mentors to our students, integrating cutting-edge discoveries into project-based coursework and experiential learning opportunities. These hands-on learning opportunities enrich the student experience, ensuring that our graduates are equipped not just with technical skills, but with the ability to lead, to innovate and to make a difference. And our alumni, who have gone on to leadership roles in major tech companies and have even started their own successful startup ventures, continue to embody the values of curiosity, creativity and purpose that are cultivated here.

Whether you are just beginning your journey or looking to expand your horizons, the Ying Wu College of Computing is a place where ideas flourish, challenges are embraced and possibilities become reality. We are excited to welcome you into a community of creators, innovators and leaders, all working toward a common goal: using the power of computing to make a difference in the world.

*Jamie Payton*

Best,  
Jamie Payton, Ph.D.  
Dean, Ying Wu College of Computing  
New Jersey Institute of Technology

Shape the Future at Ying Wu College of Computing

Ying Wu College of Computing (YWCC) at NJIT prepares students for exciting careers and leadership positions in today's competitive high-tech sector. As the only college dedicated to computing in New Jersey, and one of the few in the U.S., YWCC builds on two decades of experience in computing education and research. The college has produced more than **12,000** graduates, many of whom have gone on to distinguished careers at **Fortune 500** companies and leading academic institutions around the country — and around the world.

At YWCC, we offer undergraduate and graduate-level programs in a broad range of computing and information technology disciplines. Our programs are led by faculty with experience in both academia and industry who bring their own knowledge and experience into the classroom and provide a rigorous and relevant curriculum. These programs provide a world-class, practice-based and research-supported education that translates immediately into expertise valued in the workplace.

The YWCC Advantage

**Access to Opportunity.** Our campus is located in Newark, N.J., part of the New York/New Jersey metropolitan area, home to the world's financial hub and thousands of tech companies and only 10 miles from New York City.

**Real-World Experiences.** Our programs provide students with opportunities to apply the knowledge and tools acquired in the classroom to real-world problems and gain relevant work experience.

**Industry Partnerships.** Multiple alliances with industry create exceptional career opportunities for our students at leading companies such as Google, Facebook, Microsoft, Bloomberg, Prudential, Barclays, Johnson & Johnson and more.

**Distinguished Faculty.** World-class faculty with experience in both academia and industry who teach a rigorous and modern curriculum in cutting-edge areas, from artificial intelligence and big data analytics to cybersecurity, gaming and virtual reality.

**NJIT@Jersey City.** Located five minutes from New York City, our additional location in Jersey City offers our most popular graduate-level programs for working professionals to upgrade their skillset.

At a Glance

#1

of 15 Best Colleges  
for Computer/Information  
Systems in New Jersey  
-College Factual

1,100/year

Largest number of computing  
graduates among all universities  
in New York metro area  
-Stats on 2023 enrollment

\$87,564

Average  
Starting  
Salary 2023  
Graduates

30

Average  
Class Size

At YWCC, we have three departments with one shared mission:

To inspire, nurture and educate the next-generation of technology leaders.

Department of Computer Science

Computer science is transforming our world. Its effects are felt in every industry and benefit every aspect of daily life. From medicine to manufacturing, entertainment to engineering, the technology that defines our global society begins with a computer scientist.

The Department of Computer Science aims to provide a deep understanding of computational thinking and the skills needed to develop reliable and scalable software systems.

The department offers B.S., M.S. and Ph.D. programs that provide a strong computing foundation — from technical skills such as programming and algorithmic thinking to nontechnical skills such as problem-solving, communications and project management. Students are taught to attend to both the critical details and the big picture so they can design, develop and implement software and systems that meet current and emerging personal and business needs.

Department of Data Science

Data science is the study and practice of analytic computational methods to extract information, knowledge and structure from large data sets that can then be used for reasoning and problem-solving in the digital world. It has growing applications in health and medicine, finance, genomics, social networks, cybersecurity, journalism and practically every science and engineering field where data is collected.

Graduates of the B.S. and M.S. programs in Data Science are prepared to meet the critical and growing need for a workforce trained in data science in industry, research labs and government. Students will acquire skills to handle the entire pipeline of data processing, such as data collection, data storage, data representation, knowledge extraction from data, data visualization, data mining and analytics, machine-learning algorithms, artificial intelligence and data privacy.

Department of Informatics

Informatics is about the intersection of human, technological and organizational systems. It's about using computing technology to solve problems and power the systems that drive people and their modern enterprises. It is also about understanding and facilitating the connection between people, digital technology and computers to live, play and do business in ways never before possible.

The Department of Informatics prepares students for success in an increasingly digital-centric world of information systems. It also educates in the ubiquitous practices of information technology, which every modern organization requires to operate on a daily basis.



Degrees & Certificates

Undergraduate

- B.A. in Information Systems
- B.S. in Business and Information Systems
- B.S. in Computer Science
- B.S. in Data Science
- B.S. in Human-Computer Interaction
- B.S. in Information Technology
- B.S. in Web and Information Systems

Graduate

- M.S. in Artificial Intelligence
- M.S. in Business and Information Systems
- M.S. in Computer Science
- M.S. in Cybersecurity & Privacy
- M.S. in Data Science
- M.S. in Information Systems
- M.S. in IT Administration and Security
- M.S. in Software Engineering

Graduate Certificates

- Artificial Intelligence
- Big Data Essentials
- Business and Information Systems Implementation
- Computer Science
- Data Mining
- Data Visualization
- Foundations of Cybersecurity
- Information Security
- IT Administration
- Network Security and Information Assurance
- Software Engineering, Analysis, and Design
- Web Systems Development

Doctoral

- Computer Science
- Data Science
- Information Systems

NJIT@JerseyCity

To meet the growing demand for professionals with computational skills necessary to analyze, discover and innovate in a digital world, YWCC offers graduate-level programs in artificial intelligence, business and information systems, computer science, data science, information systems and cybersecurity & privacy at NJIT@JerseyCity.

Located at 101 Hudson Street in the Exchange Place section of the Jersey City Waterfront, NJIT@JerseyCity is an ideal location for working professionals looking to pursue part-time studies that will elevate them in the workplace or help them transition to new, cutting-edge career opportunities.

Degrees & Certificates

Graduate Degrees

- M.S. in Artificial Intelligence
- M.S. in Computer Science
- M.S. in Cybersecurity & Privacy
- M.S. in Data Science

Graduate Certificates

- Artificial Intelligence
- Computer Science
- Data Mining
- Big Data Essentials
- Foundations of Cybersecurity



Photo: Massimiliano Clari

Research

As an R1 Research University, the highest rating awarded by the Carnegie Classification®, research is an extensive and fundamental part of the college's activities. Our team of faculty and Ph.D. student researchers has grown significantly in the last decade. As experts in the fields of computer science, data science, artificial intelligence, cybersecurity, cloud computing and more, these talented individuals are responsible for developing new technologies and applying them to build smart cities, mitigate privacy breaches, power predictive analytics in business and reform the delivery of personalized health care.

Spanning a wide spectrum of topics, from human-computer interaction and cybersecurity to sophisticated data science algorithms, the research conducted by YWCC faculty and students ranges from deep computational theory to very practical applications.

At YWCC, we welcome new ideas, collaborations and any form of research partnership imaginable. That is why we also encourage students to participate in research projects both at the undergraduate and graduate levels while earning academic credit, or in some cases, as paid research assistants. Ph.D. students engage in research as their primary activity, usually while functioning as teaching assistants.

Much of the research activity at YWCC is funded through competitive grants awarded by government agencies and industry contracts, published in top international venues and, in some cases, patented and commercialized. Committed to sharing beyond publication, YWCC researchers make much of the software developed in their projects available to the general scientific community through open-source repositories.







### Industry Connections

YWCC students can take advantage of our extensive corporate network for career development, internship and job opportunities, hands-on experiences and networking events designed to forge and foster professional relationships outside the classroom.

### Capstone Program

The industry-sponsored Capstone program is a project-based learning experience where interdisciplinary teams of students work together over the course of a semester to solve a real-world technological problem. The program provides the students an opportunity to apply the knowledge and tools acquired during their studies to real solutions. Capstone enables industry sponsors to explore new technologies and solutions through proofs-of-concept and prototypes and to interact with talented students who may be their future employees.

### Co-op Program

The Co-op program provides students with real-world experiences that allow them to work in paid industry positions while earning credit for their undergraduate or graduate degree. During a co-op experience, a student works alongside internal teams to develop computing solutions and design systems that support specific business goals and objectives. They also establish valuable professional relationships, bring the knowledge and skills learned in the classroom to real-world situations and develop a deeper understanding of their field. It is not uncommon for a co-op student to be invited back by a company to continue their work, either through another co-op opportunity or through permanent employment upon graduation. Many recent co-op participants have launched their post-graduation careers at a company that sponsored their co-op experience.

### Student Organizations

Student organizations offer the opportunity to discover an active community of like-minded peers, participate in extra-curricular activities and develop team-building and leadership skills — important strengths both inside and outside of the classroom.

### ACM Student Chapter

The Association for Computing Machinery (ACM) is the world's largest educational and scientific computing society. The NJIT ACM student chapter serves the student community by offering workshops, tutoring sessions and hackathons where students come together to study and collaborate on topics of their choice. Some examples are HackNJIT, SIG Android, Algorithms, Linux and Reverse Engineering.

### Women in Computer Science

NJIT's Women in Computer Science (WICS) club promotes and supports the growing community of women who aspire to be software engineers. Members participate in mentorship programs, network with other female students and participate in professional development activities through networking events, tech talks and our alumni network. The group also participates in the annual national Grace Hopper Celebration event and organizes the annual GirlHacks Hackathon.



### The NJIT Difference

As one of the nation's leading public polytechnic universities in Science, Technology, Engineering and Mathematics (STEM) education, as well as business, architecture and design, New Jersey Institute of Technology has earned national prominence by developing high-quality, relevant academic programs that provide our students the edge they need to become leaders in the technology-dependent economy of the 21st century. At NJIT, students acquire a world-class education in an immersive learning environment that combines the benefits of small-campus intimacy with the resources of a public research university.

## Fast Facts

#2

Public University  
- The Wall Street Journal  
/College Pulse

#28

Nationally  
Top Public Colleges  
- Forbes

Top 2%

In Return  
on Investment  
- PayScale.com



“NJIT felt like the proper place for me to learn everything I needed to know about computer science.”

Jasper Davey  
Software Engineer, Apple

“The computer science curriculum helped me gain the experience I needed to design and develop software systems.”

Chaitrali Rane  
System Analyst, New Jersey  
Institute of Technology

“I truly enjoyed the teaching approach at NJIT. Professor Suresh Kumar's 'road to entrepreneurship' class was phenomenal – I use those concepts even today in my daily life.”

Braulio Tonaco  
Software Engineer, Barclays

“My experience at NJIT was extremely rewarding. Not only did I learn all the essentials of web design and information systems, but the professors really pushed me to do my best.”

Brittani Rubil  
Web Developer, Thorlabs

“Coming to NJIT and working with my advisor Professor Grace Wang was the best choice I made. Now I work with graduates from MIT, CMU and other Ivy League schools at Facebook's Machine Learning group and I am so proud I am from NJIT!”

Xiaoyaun Liang  
Ph.D., Research Scientist, Facebook

“Completing both my B.S. in Computer Science and M.S. in Data Science at NJIT helped prepare me to launch a successful career in today's job market. Working with Dr. Amy Hoover to complete my master's thesis was a truly rewarding and unforgettable experience to enhance my coursework.”

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# Preparing 21<sup>st</sup> Century Innovators

## Ying Wu College of Computing

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