College of Science and Mathematics

Department of Computer Science

Dr. Vasil Hnatyshin
Department Chairperson
Computer Science Department

- Very vibrant and fun department
- Faculty are friendly and accessible
- All CS classes are small
- Students have lots of opportunities for one-on-one interaction with faculty
- Every student has a full-time faculty advisor
- Curriculum includes a lot of Programming, Computing, and Math Courses

Computer Science Department

• Students have many opportunities to conduct research under faculty supervision
  • Annual Rowan University Science, Technology, Engineering, & Math (STEM) Student Research Symposium
  • Student present their work at the regional, national, and international conferences

• Getting a degree or a minor in CS will most definitely help the graduate securing the job.

• According to U.S. Department of Labor Bureau of Labor Statistics computer related jobs will experience significant growth
Overview of Programs

Undergraduate BS Degree
• BS Computer Science
• Computer Science Minor
• Specializations:
  ✓ Software Engineering
  ✓ Networking and Operating Systems
  ✓ Information Technology
  ✓ Programming Languages and Compilers
  ✓ Artificial Intelligence
  ✓ Graphics and Visualization
  ✓ Cyber Security
  ✓ Mobile Computing

Undergraduate BA Degree
• BA in Computing and Informatics
• More applied programming; less math and computer theory
• Specializations:
  ✓ Mobile Application Development
  ✓ "Dev Ops"

Graduate Programs
✓ MS in Computer Science
✓ BS/MS in CS (Accelerated)
✓ Certificate of Graduate Study (COGS)
✓ MS Degree in Data Analytics
✓ MS Specialization in Health Data Analytics
✓ MS Specialization and COGS in Cyber Security
B.S. in Computer Science

- Computer Science program focuses on developing flexible professionals who are equipped to learn new technologies and principles that are essential for success in such a rapidly evolving field.

- Students learn how to apply advanced scientific and industrial methodologies to develop computing solutions.

- Computer scientists are employed as software engineers, system and application programmers, systems analysts, programmer analysts, researchers, network specialists, computer system designers, system administrators, etc.

- Job opportunities exist in business, industry, government, education and the military.
B.S. in Computer Science

• The curriculum for the major consists of a set of core courses covering such areas as:
  o discrete mathematics
  o calculus and linear algebra
  o probability and statistics
  o object-oriented programming
  o data structures and algorithms
  o computer architecture
  o circuitry and hardware fundamentals
  o computer science theory
  o software engineering
  o programming languages
  o operating systems

• Students also choose from over 30 electives on a wide variety of topics including computer game development, robotics, computer animation, network security, mobile and web development, distributed systems, human-computer interaction and more.
B.A. in Computing and Informatics

- The Bachelor of Arts in Computing and Informatics is a new degree designed for students who are interested in pursuing careers in information technology which requires a solid understanding of the principles of computing – but not the underpinnings of computer science theory and mathematics.

- Such careers include, but are not limited to:
  - Programmers
  - Infrastructure Administrators
  - Support Technicians (e.g., Help Desk support)
  - Technical Application Trainers
  - Software QA / Testing Engineers
  - Computer Service Coordinators
  - Deployment Technicians (e.g., end-user support for system releases)
  - Technical Documentation Specialists
MS/BS Dual Degree in Computer Science

- **BS/MS program**: The complete accelerated Bachelor of Science/Master of Science in Computer Science Dual Degree Program,

- At the completion of the program a student receives both a BS in Computer Science and an MS in Computer Science.

- A student takes 12 credits fewer than if he/she would have obtained the degrees separately

- BS/MS students take 12 credits of graduate courses during their senior year
Masters Degree in CS from Rowan University

- The MS in Computer Science is a 30 credit hour program with an optional thesis track.
- Required course-load: a 12-credit core courses.
- Thesis Track:
  - 12 additional credits of restricted electives and
  - the 6-credit thesis sequence
- Non-thesis Track:
  - 18 additional credits of restricted electives,
  - 6 credits of which must be classified as *project intensive.*
Faculty

- **Baliga, Ganesh, Ph.D.**
  - Machine learning, object oriented design and modeling, web computing

- **Bergmann, Seth D., M.S.E.**
  - Programming language design and implementation, data locality in sorting algorithms

- **Hristescu, Gabriela, Ph.D.**
  - Computational biology, databases, parallel and distributed computing, artificial intelligence
Faculty

- **Hnatyshin, Vasil, Ph.D.**
  - Internet and TCP/IP protocol suite, Mobile ad hoc Networks and Wireless Communication, Simulation and Modeling of Computer Networks, Cyber Security

- **Lobo, Andrea F., Ph.D.**
  - Wireless networks, protocols & applications, Internet protocols & applications, computer network performance, systems modeling and simulation

- **Myers, Jack F., MS in CS**
  - Human-Computer Interaction, Software Engineering, Object-Oriented Programming, Databases Web programming
Faculty

• Kay, Jennifer, Ph.D.

• Robinson, John, Ed.D.
  – Computer networking, Web/CGI programming, object-oriented design & programming, hardware design/VHDL computer science education

• Breitzman, Anthony Ph.D.
  – Data Analytics, Data Mining, Web/Text Mining, Sentiment Analysis, Databases, Convolution Algorithms, Number Theory
Faculty

- **Ho, Shen-Shyang, Ph.D.**
  - Spatiotemporal Data Mining, Machine Learning, Artificial Intelligence, Pattern Recognition, Data Science, Privacy Issues in Data Mining

- **Tinkham, Nancy L., Ph.D.**
  - Artificial intelligence, theoretical computer science, inductive logic programming, computational linguistics, computer science education

- **Xu, Jianning, Ph.D.**
  - Computer image processing, pattern recognition, mathematical morphology
Selected Grants and Collaboration Projects

- **Andrea Lobo** and **Ganesh Baliga**
  - National Science Foundation, NSF-TUES grant award
  - Learning Algorithm Design: Project-Based Curriculum
  - Software Development for Perka

- **Vasil Hnatyshin**
  - Building Autonomous quadcopter systems

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[Image of a quadcopter]
Selected Grants and Collaboration Projects

• **Vasil Hnatyshin** and **Umashanger Thayasivam**
  – Statistical & Machine Learning techniques for analysis of pharmaceutical data
  – Bristol Myers Squibb

• **Jennifer Kay**
  – Rowan Computer Science For High Schools 2013
  – Google Corporation

• **John Robinson, Anthony Breitzman, and Jack Myers**
  – Software Development Collaboration