

Educational Efforts to Enhance Cybersecurity at W&M

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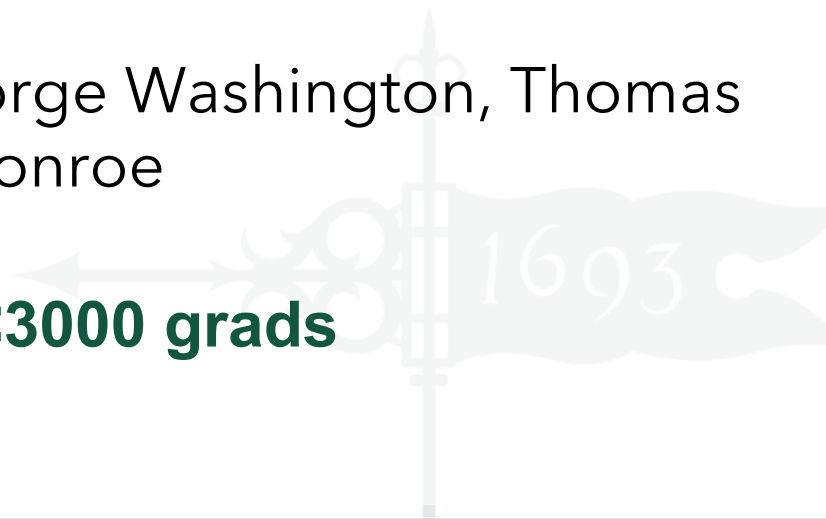


WILLIAM & MARY

CHARTERED 1693

William & Mary Fast Facts

- **February 8, 1693:** King William III and Queen Mary II of England signed the charter
- **Second oldest institution in the US after Harvard**
- **Wren Building:** the oldest college building still standing in America
- **Alma Mater of the Nation:** George Washington, Thomas Jefferson, John Tyler, James Monroe
- **Public Ivy**
- **Mid-size: <7000 undergrads, <3000 grads**



Computer Science@W&M

- **Small department:**
 - 6 full, 5 associate, 11 assistant profs
 - 4 teaching track faculty
 - Currently residing in **Arts & Sciences**
 - **School of Computing and Data in August 2025**
- **CS Student Body:** ~400 undergraduate students
107 graduate students (73 PhD)

Mission Statement

- **Excellence in research: R1 department**
 - How?
 - High quality research: publications/grants
 - Quality over quantity
 - **Every** tenured faculty who joined **since 2004** got a **CAREER**
 - **Nearly all senior faculty are Fellows in their major societies**
- **Excellence in teaching, advising, and mentorship**

RANKINGS

- csrankings: hover 69-72 (w/ Caltech, Dartmouth)
- Per area:
 - Security: 55
 - Software Engineering: 23
 - HPC: 32
 - Graphics: 33
 - Mobile Computing: 62

WILLIAM & MARY | COMPUTER SCIENCE

Academic Snapshot

Faculty

- 32% female faculty
- 23 tenured and tenure-eligible faculty
 - 7 professors
 - 5 associate professors
 - 11 assistant professors
- 4 teaching faculty
 - 2 teaching professors
 - 1 associate teaching professor
 - 1 assistant teaching professor

Students

- Undergraduate - 336 declared majors as of Spring 2023
 - 45% Students of Color (including international students)
 - 31% female
 - 18% Pell grant recipients
 - 14% first-generation
- Graduate - 107 students as of Fall 2023
 - 26% female
 - 34 MS students
 - 73 PHD students

Degrees

- BS/BA in Computer Science
- MS in Computer Science
- PHD in Computer Science

2022-2023 Highlights

Faculty Highlights

- **Gang Zhou** named IEEE Fellow
- **Denys Poshyvanyk** named Chancellor Professor
- **Adwait Nadkarni** named W&M Class of 1953 Distinguished Associate Professor

Student/Alumni Highlights

- W&M's Society of Women in Computing wins the student chapter ACM award for outstanding community service for the third time
- W&M students win third place in NSWCDD Artificial Intelligence (AI) and Machine Learning (ML) Innovation Challenge
- PhD Alumnus **Kevin Moran** wins the MobileSoft 2023 Rising Star Award
- PhD Alumna **Lishan Yang** wins the SPEC Kaivalya Dixit Distinguished Dissertation Award 2022

2022-2023 NSF CAREER Award Recipients

 <p>Adwait Nadkarni has received support from the National Science Foundation to assist with his project on security compliance for smart products.</p>	 <p>Dmitry Evtushkin has received support from the National Science Foundation to advance his study of vulnerabilities in computer microarchitecture.</p>	 <p>Oscar Chaparro has received support from the National Science Foundation to develop a theory of how developers make code change decisions.</p>
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All faculty hired since 2004 have received a prestigious CAREER Award

ACM & IEEE Honorifics, 3 IEEE Fellow | Editorships in ACM, IEEE, SIAM journals | Flagship conference leadership | Best papers yearly

Research Areas

- Security and Privacy
- Software Engineering
- Systems & HPC
- Sensor Networks, Wearable Computing
- Machine Learning/Data Mining
- Graphics
- Computational Sciences/Data Analytics
- Edge Computing
- Health Informatics
- Human-Computing Interaction

2023-2024 New Faculty

 <p>Matthew Chapman Cyber Operations, International Cyber Capacity Building Ph.D., University of Hawaii</p>	 <p>Ye "Ashley" Gao Domain Generalization, Transfer Learning, Cyber-Physical System Applications Ph.D., University of Virginia</p>	 <p>Sidi Lu Edge Computing, Emerging Mobility, Applied AI, Data Science Ph.D., Wayne State University</p>	 <p>Yanfu Zhang Machine Learning, Data Mining, Computer Vision Ph.D., University of Pittsburgh</p>	 <p>Yixuan "Janice" Zhang HCI, VLSI, Equitable Computing, Crisis and Health Informatics Ph.D., Georgia Tech</p>
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35 years of Computer Science PhDs

Security at W&M CSCI: Faculty

- 3 core tenure-track security faculty + 4 other faculty, and growing
 - Adwait Nadkarni (software, systems, IoT, privacy)
 - Dmitry Evtushkin (architecture, systems)
 - Stephen Herwig (systems, software, hardware)
 - Qun Li (systems, edge, privacy)
 - Denys Poshyvanyk (software engineering, cps)
 - Gang Zhou (IoT/CPS, privacy)
 - Evgenia Smirni, Sidi Lu (CPS, vehicle safety)
- 1 Teaching track faculty
 - Matt Chapman (cyber operations)

Security at CS@W&M CSCI

- Consistently publishes in all top-tier security venues (S&P, USENIX, CCS, NDSS)
- >15 MS/PhD students
- Significant yearly funding (NSF, CoVA CCI)
- 10 courses + proposals for more
- Next natural step?

Natural Step: Cybersecurity Center

- Discussions with Law and Business Schools in Jan'23
- Cybersecurity Center approved in Dec'23
- CAE-R → placed in April'24 cycle
- CAE-CD → in progress

Growth: faculty/students/broaden research and education