

# Doctor of Philosophy in Computer and Cyber Sciences

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AUGUSTA UNIVERSITY

SCHOOL OF COMPUTER  
AND CYBER SCIENCES



## About Augusta University

Founded in 1828, located in Augusta, Georgia, Augusta University is a public research university and medical center dedicated to training the next generation of innovators, leaders and health care providers. Based in Augusta with locations across Georgia, Augusta University is at the forefront of groundbreaking research focused on improving and enriching the student experience to be boundless.

Augusta is centrally located among many government and corporate partnerships critical to our nation's cybersecurity efforts, including the U.S. Army Cyber Center of Excellence, NSA Georgia, the future home of the U.S. Army Cyber Command and Savannah River National Laboratory. Our faculty come from government and industry backgrounds who bring valuable, practical skills into the classroom. It is a vibrant time in the life of Augusta University, and the School of Computer and Cyber Sciences has boundless opportunities for growth and advancement in being a national leader for cyber security.



### PhD in Computer and Cyber Sciences

Augusta University's PhD program in Computer and Cyber Sciences will prepare students for top ranking positions in research-based companies, government agencies, and technology based startup companies. This is accomplished through immersion in faculty research projects, satisfying qualifying and elective course requirements, successfully passing a comprehensive examination, engaging in productive dissertation research, and passing the dissertation defense. Students may consider several faculty research projects to determine which faculty member best fits their research interests and might serve as a future Dissertation Advisor.



## Program Benefits

Students graduating with doctoral degrees in Computer and Cyber Sciences will have distinct advantages. Not only are doctoral degrees increasingly included in minimum hiring requirements, but tech companies commonly reserve their top positions for doctor degree holders, and those with PhDs start at higher level positions immediately upon hiring. The disciplines of Computer Science and Cybersecurity continue growing in their strategic importance, as our nation and the world increasingly becomes a digital information and computer automation society. Each segment, from public and education, to industry and military, is becoming a sophisticated component of the overall digital enterprise.

While a graduate degree in computing disciplines opens many new avenues of possible work in the industry, including with tech titans Google, Amazon, Apple, Microsoft, and Oracle, employers are increasingly including doctoral degrees in their minimum hiring requirements.

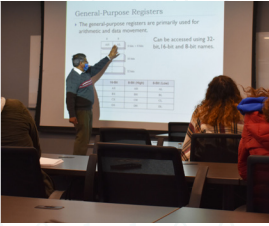
## Admission Requirements

- Sufficient proficiency in English is an essential prerequisite to be admitted into the program.
- Proof of eligibility
- CV/Resume
- At least two letters of recommendation
- A one-page personal statement.
- Bachelor of Science in Computer Science or in a related field (Computer Engineering, Information Systems, Software Engineering, Mathematics, etc.) from an established program or an evaluation of their relevant courses
- A cumulative GPA of 3.0/4.0 or its equivalent
- A General GRE score or ETS Field Test in Computer Science score
- A minimum TOEFL score of 550 (paper-based), 213 (computer-based), or 80 (internet-based), for candidates who need to additionally demonstrate English proficiency





# FACULTY



## GAGAN AGRAWAL

Gagan Agrawal is a Professor in School of Computer and Cyber Sciences at Augusta University. Agrawal received his undergraduate degree from Indian Institute of Technology, Kanpur, in 1991 and MS and PhD degrees from University of Maryland, College Park, in 1994 and 1996. He served as assistant professor at

University of Delaware from 1996 to 2001, and Associate and Full Professor at Ohio State between 2001 and 2019. Agrawal's research interests include high performance computing (with emphasis on programming and application frameworks, performance modeling and resilience), parallel machine learning and data mining, cloud and edge computing, and scientific data management. He has published more than 275 papers in these areas over his career and has supervised 30 PhD dissertations. Several of his works have received best paper awards or best paper finalist nominations, including from conferences like SC, HPDC, ICS, CCGRID and HiPC. His work has been extensively funded by National Science Foundation and Department of Energy. He has served on editorial boards of IEEE Transactions on Parallel and Distributed Computing, IEEE Transactions on Cloud Computing, and Journal of Parallel and Distributed Computing. He also served on the ACM Dissertation Award Committee, including chairing it for one year. He has also served as a program committee member, area chair or program co-chair for several conferences in his research areas.



## PAUL ATTIE

Paul Attie is a Professor of Computer and Cyber Science at Augusta University. He received a Ph.D. in Computer Science from the University of Texas at Austin in 1995, an M.Sc. in Computer Science from University College London in 1978, and a B.A. in Engineering Science from Oxford University in 1981. Paul has previously held faculty positions at Florida International University, Northeastern University, and the American

University of Beirut. He was also a Visiting Scientist and Research Affiliate at the MIT Computer Science and Artificial Intelligence Laboratory (CSAIL). Paul also was a member of technical staff at the Industrial Research Consortium MCC (Microelectronics and Computer Technology Corporation).

Among Paul's publications is the paper Specifying and Enforcing Intertask Dependencies, which appeared in the Very Large Databases Conference in 1993, and has been cited 368 times to date.

Paul's research is in software engineering, formal methods, and distributed computing. He works on devising efficient methods for specifying, designing, and reasoning about the behavior of large distributed software systems. In particular, he showed that the safety, liveness, and deadlock-freedom of large concurrent programs can be established by reasoning about small sets (2 or 3) of component processes at a time, thereby avoiding state-explosion.



## CLEMENT AUBERT

Dr. Clément Aubert is an Assistant Professor in the School of Computer and Cyber Sciences and an associate faculty member of the Graduate School at Augusta University. He worked on developing bifibrational parametric models of System F with effects with Dr. Patricia Johann at Appalachian State University (Boone, NC) as a post-doctoral researcher.

Prior to moving to the United States, he occupied two post-doctoral researcher positions in France, for the Centre national de la recherche scientifique (CNRS) and Institut national de recherche en sciences et technologies du numérique (INRIA). At University Paris-Est Créteil (Créteil, France), he worked with Dr. Daniele Varacca on semantics of reversible concurrent computation, and at Aix-Marseille University (Luminy, France), he worked with Dr. Emmanuel Beffara on session types for concurrent calculi. He holds a PhD in Computer Science from the University of Paris 13 (Paris, France), a Master's Degree in Mathematics from the University Paris-Diderot 7, and Bachelor's Degrees in History and Philosophy from the University of Reims and University of Paris 1. He taught both in France and in the United States Mathematics and Computer Science classes such as Database Systems, Introduction to Programming Languages (Java, C, C#), Operating Systems, System Administration, etc. His current research interests are type systems for the study of complexity, and reversible concurrent systems.



## BOGDAN CHLEBUS

Bogdan S. Chlebus is a Professor in the School of Computer and Cyber Sciences at Augusta University. He graduated with a MS in Mathematics from the University of Warsaw in 1978, and a PhD in Computer Science from the University of Warsaw in 1983. He taught at the University of Warsaw and the University of Colorado Denver prior to coming to Augusta University in 2019. His research interests are in algorithms for distributed systems and communication networks.



## HARLEY EADES

Harley Eades is an Associate Professor in the School of Computer and Cyber Sciences. His research is centered on the theory of programming languages, computational logic, and category theory, which earned him a funding award from the National Science Foundation. He obtained his BS in applied mathematics and computer science from Millikin University in 2009, his MS in theoretical computer science in 2013 from the University of Iowa, and his PhD in theoretical computer science in 2014 also from the University of Iowa. Dr. Eades joined the faculty at Augusta University after earning his PhD in 2014.



## ONYEKA EZENWOYE

Dr. Onyeka Ezenwoye is an Associate Professor in the School of Computer and Cyber Sciences at Augusta University. Dr. Ezenwoye received his Bachelor's degree from the University of Manchester in Manchester, England. In 2006, he received his Masters degree in Computer Science from Florida International University as well as his PhD the following year. Dr. Ezenwoye previously taught at South Dakota State University in Brookings, South Dakota. His research interests are in non-functional aspects of software engineering, such as security and reliability, as well as software engineering education.



## MARK HARRIS

Dr. Mark Harris has taught information technology and cyber security courses at the collegiate level since 2000. He started at Augusta University in 2016 and is now the director of graduate studies for the School of Computer and Cyber Sciences. Dr. Harris has a Ph.D. in Business with a major in Information Systems Security from Virginia Commonwealth University. He also has an M.S. in E-commerce and a B.S. in Business with a major in Information Technology from Old Dominion University. Dr. Harris' research interests include mobile and wearable device security, behavioral factors of security, security policy management, security awareness training, security curriculum, and health security. He has authored dozens of manuscripts in well-respected refereed information systems and security journals and conferences, such as the International Journal of Information Management, Communications of the Association for Information Systems, and the Journal of Information Systems Education.



## DARIUSZ KOWALSKI

Dr. Dariusz Kowalski is a Professor in the School of Computer and Cyber Sciences. His primary research interests are in design, analysis and applications of algorithms, and the main areas of expertise are distributed and parallel computing, network communication, and fault-tolerance. He published more than 160 peer-reviewed research papers in computer science, and also in mathematics, physics and bioinformatics. Kowalski received a Master of Science in Mathematics in 1996 and a PhD in Computer Science in 2001, both from Warsaw University, Poland. Dr.

Kowalski joined the School of Computer and Cyber Sciences faculty in 2019 from the University of Liverpool in the United Kingdom.



## HODA MALEKI

Dr. Hoda Maleki is an Assistant Professor with the School of Computer and Cyber Sciences. She received her PhD from the University of Connecticut in 2019. Her research interests are in system security and privacy. She has combined rigorous cryptographic thinking with system design resulting in various works on supply chain security & privacy, security & privacy of infrastructure-as-a-service (OpenStack), moving target defense, and more recently resulting in studies on social

network privacy and blockchain technology. Her work on secure supply chain management was well-received by Comcast and led to continued funding through the Comcast Center of Excellence. Before attending UConn to obtain her PhD, she received her Masters in Information and Data Security in Tehran Polytechnic University, Tehran, Iran.



## MICHAEL NOWATKOWSKI

Dr. Michael Nowatkowski is the Head of the Cyber Program of Study and an Associate Professor with the School of Computer and Cyber Sciences. Dr. Nowatkowski received his Bachelor of Science in Electrical Engineering from the Rose-Hulman Institute of Technology in 1990. Dr. Nowatkowski received his Master of Science in Electrical and Computer Engineering from the Georgia Institute of Technology in 2000,

and returned to the Georgia Institute of Technology in 2010 to receive his PhD in Electrical and Computer Engineering. He holds many certifications including GIAC Intrusion Analyst (GCIA), GIAC Certified Incident Handler (GCIH), GIAC Information Security Professional (GISP), as well as GIAC Response and Industrial Defense (GRID). Additionally, Dr. Nowatkowski is a Certified Information Systems Security Professional (CISSP). Prior to his arrival at Augusta University in 2016, Dr. Nowatkowski served as an Officer in the United States Army from 1990-2016. During his service in the Army, Dr. Nowatkowski taught in the Department of Systems Engineering as well as the Department of Electrical Engineering and Computer Science at the United States Military Academy in Westpoint, New York. His research interests include Embedded System Security, Industrial Control System Security, Cyber-Physical Systems, and Cyber Security Education.



## NISHA PANWAR

Dr. Nisha Panwar is an Assistant Professor in the School of Computer and Cyber Sciences (SCCS) at Augusta University. Prior to joining SCCS she was Postdoctoral scholar (2017-2019) at Department of Computer Science, University of California Irvine. The Postdoctoral proposal was based on Security and Privacy issues in cloud-assisted user-centric Internet of Things, e.g., smart homes and smart building scenarios. Dr. Panwar received her PhD

in 2016 at department of Computer Science, Ben-Gurion University of the Negev, Israel. The PhD dissertation was based on Vehicular Network Security aspects. Dr. Panwar received her Master's Degree in (2012) at Computer Engineering at NIT Kurukshetra India. During Postdoc Dr. Panwar worked on trusted computing in smart spaces that won Best Paper Award in IEEE NCA in 2019. In addition, during all these years Dr. Panwar had a great opportunity, to work with a good diverse range of scholars and teachers in Computer Sciences. In addition, had an opportunity to outreach and connect with the special audiences at events such as ACM WoMENcourage, CyberW and NSF-sponsored Women in data Sciences (WiDS). Current research interests include (not limited to) trustworthy computing in user-centric smart spaces, smart home privacy issues, vehicle network security, integrity and privacy issues in cloud-assisted remote services such as data retention and deletion guarantees.



## REZA RAHAEIMEHR

In January 2020, Reza Rahaeimehr joined to Computer and Cyber Sciences department as an assistant professor. He got a Ph.D. in Computer Science at the University of Connecticut in November 2019. He did his Masters in Computer Science and Software Engineering in Tehran Polytechnic University, Tehran, Iran, and received his bachelor's degree in Software Engineering from Isfahan University, Isfahan, Iran. He has

14 years of teaching and industrial experience prior to joining Augusta University. His research interests are in applied security and cloud computing. He has combined rigorous cryptographic thinking with system design resulting in various works on supply chain security and authentication in a cloud platform (OpenStack). His work on cloud computing was chosen as one of the three outstanding projects among Modular Approach to Cloud Security (MACS) projects as a result of a NSF site visit in 2016.



## ALEXANDER SCHWARZMANN

Alexander A. Schwarzmann is the Dean of the School of Computer and Cyber Sciences at Augusta University. His research is in fault-tolerant distributed computing and security of electronic election systems. He earned his B.S. from Stevens Institute of Technology in 1979, M.S. from Cornell University in 1981, and Ph.D. from Brown University in 1992, all in Computer Science, and he did his post-doctoral work at

MIT from 1995 to 1997. Prior to pursuing his academic career he worked at Bell Labs and Digital Equipment Corp. In 1997 he joined the faculty at the University of Connecticut, where he ultimately served as the Department Head of Computer Science & Engineering. He chaired and served on the Program Committees of more than 50 leading conferences, and he served as the Steering Committee Chair of both the ACM Symposium on Principles of Distributed Computing and EATCS Symposium on Distributed Computing. He is an author of over 150 technical publications and three books.



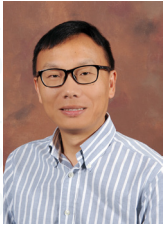
## JAMES SMITH

Dr. James N. Smith is an Assistant Professor in the School of Computer and Cyber Sciences at Augusta University. Dr. Smith holds a Doctor of Business Administration degree in information systems from Kennesaw State University. He also holds a Master of Business Administration from Mercer University and a Bachelor of Business Administration in information systems from Georgia Southern University.

Before coming to Augusta University, Dr. Smith taught previously at Nova Southeastern University, Mercer University, and Georgia Southern University.



Prior to entering academia, Dr. Smith was in the information technology industry for nineteen years and was the Director of Information Technology for L.E. Schwartz & Son, Inc. He holds numerous certifications including the Certified Information Systems Security Professional (CISSP), Microsoft Certified IT Professional: Enterprise Administrator, CompTIA Advanced Security Practitioner, and CompTIA Secure Infrastructure Specialist. Dr. Smith also serves in various corporate and not for profit board capacities. Dr. Smith's research interests revolve around cybersecurity from a human and organizational perspective.



## WEIMING XIANG

Dr. Weiming Xiang is currently an Assistant Professor in the School of Computer and Cyber Sciences at Augusta University. Dr. Xiang received his B.S. degree from the Department of Electrical Engineering, East China Jiaotong University, Nanchang, China, in 2005 and his M.S. degree from

the Department of Automation, Nanjing University of Science and Technology, Nanjing, China, in 2007, and his PhD degree from the School of Transportation and Logistic, Southwest Jiaotong University, Chengdu, China, in 2014 with his PhD thesis on formal methods for hybrid traffic systems awarded the Outstanding PhD Dissertation of Southwest Jiaotong University. Before joining Augusta University, Dr. Xiang worked as a Postdoctoral Research Scholar in the Department of Electrical Engineering and Computer Sciences at Vanderbilt University from September 2016 to July 2019, a Postdoctoral Research Associate in the Department of Computer Science and Engineering at the University of Texas at Arlington from November 2015 to August 2016, a Research Associate in the Department of Mechanical Engineering at the University of Hong Kong from May 2015 to October 2015. Dr. Xiang was an Associate Editor of Neurocomputing (2014-2019), and he was the Leading Guest Editor of Special Issue: Recent Advances in Control and Verification for Hybrid Systems in IET Control Theory and Applications and he is currently on the Editorial Board of IET Control Theory and Applications. Dr. Xiang is an IEEE Senior Member. Dr. Xiang's research interest is developing formal synthesis and verification techniques and software tools for Cyber-Physical Systems (CPS). His current research centers on formal methods on safety, security and reliability of learning-enabled CPS. He is also broadly interested in methods and applications across CPS domains, such as control synthesis, stability analysis, reachable set computation, hybrid systems, power and energy, transportation, fuzzy logic, and neural networks.

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