NORTH CAROLINA STATE UNIVERSITY

FALL DIPLOMA CEREMONY

DEPARTMENT of COMPUTER SCIENCE

Friday, December 20, 2019

James T. Valvano Arena inside William Neal Reynolds Coliseum

1:00 P.M.

Welcome

Welcome to the Fall diploma ceremony of the Department of Computer Science at North Carolina State University, Raleigh. The department was formed in 1967 and is one of the oldest in the nation. The department currently has over 1,850 students. We are among the top in the nation in the number of awarded bachelor's, master's, and doctoral degrees in computer science, and we lead in both teaching and research accomplishments. We continue our tradition of excellence by proudly honoring a new group of graduates.

The ceremony today recognizes the academic achievements of the Fall 2019 graduating students receiving bachelor's, master's, or doctoral degrees in the field of computer science. It is a very special, auspicious, and exciting day for all of us -- students, their families and friends, and our faculty and staff, that culminates years of hard work and dedication for all concerned. Students graduating today bring the number of our alumni to over 10,000.

On behalf of the faculty and staff, I would like to thank you for coming, and to extend our warmest congratulations to the students, their families, and their friends.

With best wishes,

Gregg Rothermel
Department Head

FALL DIPLOMA CEREMONY

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Pre-Processional Comments………..……………………………………..……….Ken Tate
Director of Engagement and External Relations

Processional……………………………………………………..Pomp and Circumstance
Sir Edward Elgar

Welcome……………………………………………………………….Gregg Rothermel, Ph.D.
Department Head

Student Speakers………………………………. Louis Jacobowitz and Colton Gregory Botta

Speaker ……………………………………………………………….. Joseph Bastante
CTO, Blue Cross and Blue Shield of North Carolina

Introduction of Honor Students, Faculty and Staff ………………… Sarah Heckman, Ph.D.
Director of Undergraduate Programs

Presentation of Degrees …………………………………………….George Rouskas, Ph.D.
Director of Graduate Programs

Sarah Heckman, Ph.D.
Director of Undergraduate Programs

Gregg Rothermel, Ph.D.
Department Head

Recessional……………………………………………………………Triumphal March From Aida
Giuseppe Verdi

GUEST SPEAKER
Joseph Bastante
CTO, Blue Cross and Blue Shield of North Carolina

Bastante is a technology change leader who has led technology transformation for world-class organizations for more than two decades.   In his current role, he has held responsibility for major areas of IT whereby he transforms the organization, gains stability in outcomes, and transitions for longer-term operations.

Most recently Bastante has envisioned, gained approval for, and executed a major data center migration and modernization program building colocation data centers in proximity to cloud vendors. As this work has been transitioned, he is championing the AI strategy for the company, leading a comprehensive Cloud deployment initiative, and has recently taken responsibility for all information delivery functions in IT to modernize and accelerate speed-to-market. Bastante leads all architecture functions, mobile solution delivery, and an innovation practice, which is growing due to executive leadership excitement about recent innovations.

One of Bastante's defining qualities is his commitment to ongoing learning in technology, leadership, and business. He devotes a significant amount of personal time learning and applying the latest and most important new technologies. He also continues to study leadership material, often engaging his staff through book clubs and discussions.

Prior to Blue Cross, Bastante held leadership positions at Quintiles Transnational (Now IQVIA) in IT and within the business where he helped define a new model for drug development. He has held positions of increasing responsibility at Johnson & Johnson and AT&T. Additionally, he has provided strategic and technology consulting to organizations in the industries of Financial, Telecommunications, Health & Life Sciences, Manufacturing, and Insurance.

Bastante holds both an M.S. and B.A. in Computer Science and has earned several certifications, including Lean/Six Sigma Black Belt certification from the American Society for Quality and Project Management certification from PMI.

He often is sought as a speaker on the topics of technology, IT transformation, and process improvement. Most recently, he has presented at the Premier CIO Forum Conference, the Digital Enterprise Transformation Assembly, the Triangle Technology Executive Council, and the American Society for Quality chapter meetings.

COMPUTER SCIENCE DEGREES

Doctor of Philosophy

A Doctor of Philosophy (Ph.D.) is the highest academic degree an individual can earn. In addition to completing coursework specified by the advisory committee (54 or more credits beyond the master of science), Ph.D. students must demonstrate breadth of knowledge, pass a series of examinations, and defend a substantial and original scholarly dissertation.

Master of Science

The Master of Science (M.S.) is a traditional research-oriented degree. Master of Science graduates have successfully completed advanced coursework in computer science. Students with thesis titles below their name have written and defended a thesis summarizing their supervised research.

Master of Science in Computer Networking

Master of Science in Computer Networking (MSCN) graduates have successfully completed advanced coursework in computer networking. Students with thesis titles below their name have written and defended a thesis summarizing their supervised research.

Master of Computer Science

The Master of Computer Science (MCS) program is a professional degree program designed primarily to meet the needs of industry. Master of Computer Science graduates have successfully completed advanced coursework in computer science.

Bachelor of Science

The Bachelor of Science (B.S.) degree is conferred upon students who have successfully completed a program of study including both general coursework in the humanities, social sciences, mathematics, and physical sciences as well as specialized courses in computer science.

DOCTOR of PHILOSOPHY

AMRITANSHU AGRAWAL

Dissertation: *On the Nature of Software Engineering Data (Implications of ε-Dominance in Software Engineering)*

Committee Chair: Timothy Menzies, Ph.D.

Amritanshu Agrawal grew up in India and earned his B.E. degree in Computer Science in 2015. He then moved to Raleigh, NC in 2015 to pursue his Ph.D. in Computer Science at NC State, under the direction of Dr. Timothy Menzies.

His research involved hyperparameter tuning, machine learning, and software engineering. During his studies, he authored more than 15 papers in top international software engineering conferences and journals such as ICSE, MSR, FSE, IST, and TSE. His dissertation resulted in a tool called DODGE, providing a better and faster optimization.

Upon completing his Ph.D., he moved to Boston, MA and joined Wayfair as a Data Scientist.

DOCTOR of PHILOSOPHY

BITA AKRAM

Dissertation: *Assessment of Students' Computer Science Focal Knowledge, Skills, and Abilities in Game-Based Learning Environments*

Committee Co-Chairs: James Lester, Ph.D. and
Eric Wiebe, Ph.D.

Bita Akram was born in Tehran, Iran on July 23, 1990. She received her B.S. in Computer Engineering from Sharif University of Technology in 2013. After finishing her undergraduate studies, she immediately started her M.S. in Computer Science at the University of Calgary, where her research was focused on devising algorithms for conducting accurate and efficient scientific data visualization.

Bita began her Ph.D. studies at NC State in 2015. She later joined the Department of Computer Science and the Intellimedia group to continue her studies under Dr. James Lester and Dr. Eric Wiebe. During her Ph.D. studies, she remained a Research Assistant at both the Center for Educational Informatics and the Friday Institute for Educational Innovation, with a research focus on improving access and quality of CS Education by both developing innovative CS curricula and designing advanced learning technologies for instructional support.

She accepted a Teaching Faculty position at NC State in March 2019 to teach Computer Science while she stays engaged with research on advanced learning technologies for CS education.

DOCTOR of PHILOSOPHY

BENJAMIN ERIC ANDOW

Dissertation: *Privacy Risks of Sensitive User Data Exposure in Mobile Ecosystems*

Committee Chair: William Enck, Ph.D.

Benjamin Andow was born and raised in Garfield Heights, Ohio. He received his B.S. degree in Computer Information Science from Cleveland State University in May, 2013.

Benjamin pursued his Ph.D. in Computer Science at NC State from 2013 until 2019, under the direction of Dr. William Enck. His research interests broadly fall within the areas of systems security and privacy, with a primary focus on analyzing and improving the security and privacy of computing platforms and the software targeted towards those platforms.

Upon completing his Ph.D., Benjamin joined the IBM T.J. Watson Research Center as a Supplemental Research Staff Member in the Information Security Group.

DOCTOR of PHILOSOPHY

ROGELIO ENRIQUE CARDONA-RIVERA

Dissertation: *A Model of Interactive Narrative Affordances*

Committee Co-Chairs: David Roberts, Ph.D. and
R. Michael Young, Ph.D.

Rogelio was born in San Juan, Puerto Rico in 1987. He attended the University of Puerto Rico at Mayagüez , and earned a B.S. in Computer Engineering, with minors in Economics and Mathematics in 2010. Prior to graduating, he completed internships at Goldman Sachs and the MIT/Lincoln Laboratory. Upon graduation, Rogelio earned the National Ph.D. GEM Fellowship, completing an internship at Apple, Inc. He subsequently enrolled in NC State's Ph.D. program in Computer Science, under the direction of Dr. R. Michael Young.

Rogelio earned the Department of Energy's Computational Science Graduate Fellowship in 2011. He worked as a Visiting Scholar at Sandia National Laboratories in Albuquerque, NM during the Summer of 2013. He then worked as a Computational Narratologist at Disney Research in Pittsburgh, PA during the first half of 2016. In 2017, prior to finishing his graduate education, Rogelio was recognized as a "New and Future Educator in AI" by the Association for the Advancement of Artificial Intelligence. That same year, Rogelio accepted a tenure-track position within the School of Computing and the Entertainment Arts and Engineering Program at the University of Utah in Salt Lake City, UT.

Rogelio researches technologies to improve game design and development through artificial intelligence. He has published at diverse, high-impact venues in and around intelligent narrative technologies, and his work has been recognized with a Best Paper Award at the International Conference on Interactive Digital Storytelling (ICIDS) in 2012, a Best Student Paper on a Cognitive Science Topic at the Workshop on Computational Models of Narrative in 2012, and an Honorable Mention for Best Paper at the ACM Computer-Human Interaction Conference in 2016.

DOCTOR of PHILOSOPHY

JIANFENG CHEN

Dissertation: *On the Value of Sampling and Pruning for Search-Based Software Engineering*

Committee Chair: Timothy Menzies, Ph.D.

Jianfeng Chen grew up in Guangdong, China, and received his B.S. in Software Engineering from Shandong University in 2014. After that he moved to Raleigh, NC to pursue his Ph.D. in Computer Science at NC State, under the direction of Dr. Timothy Menzies.

His research focused on software systems and development process optimization. During his Ph.D., he had an internship at Facebook and a co-op at LexisNexis.

Upon completing his Ph.D, Jianfeng is now working as a Research Scientist at Facebook, Inc.

DOCTOR of PHILOSOPHY

TING DAI

Dissertation: *A Hybrid Approach to Cloud System Performance Bug Detection, Diagnosis and Fix*

Committee Chair: Xiaohui Helen Gu, Ph.D.

Ting Dai grew up in China, where he received his B.S. and M.S. degrees from Nanjing University of Posts and Telecommunications in 2011 and 2014, respectively. He moved to Raleigh, NC in 2014 to pursue his Ph.D. in Computer Science at NC State, under the direction of Dr. Helen Gu.

His research focused on applying static code analysis and machine learning techniques on cloud computing and system reliability. He was also interested in blockchain and cryptography technologies. During his Ph.D. he published eight papers in international journals and major peer-reviewed conference proceedings.

Upon completing his Ph.D., Ting moved to New York and joined IBM Watson as a Research Staff Member.

DOCTOR of PHILOSOPHY

ANWESHA DAS

Dissertation: *Predicting Location and Time of Anomalies in Large-Scale Computing Systems via Log Mining*

Committee Chair: Frank Mueller, Ph.D.

Anwesha Das is from India, where she completed her undergraduate and postgraduate studies in Computer Science from West Bengal University of Technology, in Kolkata, and IIT Bombay, respectively. After working for a year at Intel in Bangalore, she came to Raleigh, NC to pursue her Ph.D.

Her dissertation involved failure prediction in large-scale computing systems. She has worked on performance and reliability of systems in general, encompassing clouds and HPC.

Anwesha is currently a Post-Doctoral researcher at Stanford, working on enhancing the next generation x-ray free electron laser through various computer science techniques.

DOCTOR of PHILOSOPHY

LIANG DONG

Dissertation: *2D Human Pose Estimation by Integrating Convolutional Neural Networks and Structural Information*

Committee Co-Chairs: Min Chi, Ph.D. and
Tianfu Wu, Ph.D.

Liang Dong was born and grew up in Hubei, China. He received his B.S. and M.S. degrees from Nankai University in 2011 and 2014, respectively.

He moved to Raleigh, NC in 2014 to pursue his Ph.D. from NC State. His research focused on computer vision and 2D human pose estimation.

Upon completing his Ph.D., Liang moved to Mountain View, CA, where he is now a Software Engineer in the YouTube team at Google.

DOCTOR of PHILOSOPHY

DENAE FORD ROBINSON

Dissertation: *Identity-Based Signals and E-Mentorship to Support Engagement in Online Programming Communities*

Committee Chair: Christopher Parnin, Ph.D.

Denae Ford Robinson grew up in Prince George's County, Maryland. Denae earned her B.S. in Computer Science at NC State, with honors in 2014. Fascinated by the cognitive demands of software development, Denae obtained her M.S. in Computer Science at NC State, with a graduate minor in Cognitive Science in 2016. Following her interest in research, re-ignited by her work on undergraduate research, she pursued her Ph.D. in Computer Science at NC State, under the direction of Dr. Christopher Parnin.

During her time at NC State, Denae balanced a competitive NCAA Division 1 track and field career, served as President of Sisters in Sports, was Vice President of Women in Computer Science, and conducted undergraduate research.

Denae's continued interest in who the builders of technology are and how they overcome challenges has driven her research at the intersection of human-computer interaction, software engineering, and socio-technical ecosystems. Throughout her academic career, Denae has interned and collaborated with research laboratories and technology companies, including SAS Institute, MIT Lincoln Laboratory, Microsoft Research, Stack Overflow, and Facebook Research.

Dr. Denae Ford Robinson is currently a Senior Researcher at Microsoft Research in Redmond, WA focusing on how identity-based signals influence empathic bonds between software developers in socio-technical ecosystems. One example of this is how developers from geographically-dispersed emerging OSS (open source software) countries build software with a localized impact.

DOCTOR of PHILOSOPHY

RAGHAV HAMPAPUR VENKATNARAYAN

Dissertation: *Using Ambient Signal Modalities for Ubiquitous Sensing*

Committee Chair: Muhammad Shahzad, Ph.D.

Raghav grew up in Mysore, India where he received his Master of Technology degree in Computer Science from the International Institute of Information Technology, Hyderabad, India. He moved to Raleigh, NC in 2015 to pursue his Ph.D in Computer Science at NC State under the direction of Dr. Muhammad Shahzad.

His research focused on developing theoretical and data driven models for human sensing, wireless communications, and mobile computing. During his Ph.D, he has published eight papers and presented his work at premier mobile computing conferences and journals. His research at NC State has also won research awards and grants. Most notably, his work on using WiFi as a distance sensor has attracted a $150,000 research grant from Sony Corporation and also won the best demo award at premier networking conference this year.

Upon completing his Ph.D., Raghav will join SafePass, Inc. as a Research Scientist and also serve as a Tracking Research Specialist at NC State. His work will involve developing advanced indoor location tracking systems for low-power portable devices.

DOCTOR of PHILOSOPHY

ZHEWEI HU

Dissertation: *Helping Students Make Better Contributions to Open-Source Software Projects*

Committee Chair: Edward Gehringer, Ph.D.

Zhewei Hu was born in Zhejiang Province, China. He received his B.S. degree in Education Technology from Zhejiang Normal University. He moved to Raleigh, NC in 2014 to begin his M.S. degree in Computer Science at NC State.

In 2016, he finished his M.S. degree and began his Ph.D. in Computer Science at NC State, under the direction of Dr. Ed Gehringer. His research focused on computer science education and software engineering. He has published and presented his work at various conferences, such as ICSE-SEET and SIGCSE.

Upon completing his Ph.D., Zhewei moved to San Francisco, CA, where he is now a Site Reliability Engineer at Pinterest.   His job is to make sure that Pinterest is up 24/7.

DOCTOR of PHILOSOPHY

RAHUL KRISHNA PRASAD

Dissertation: *Learning Actionable Analytics in Software Engineering*

Committee Chair: Timothy Menzies, Ph.D.

Dr. Rahul Krishna completed his B.E. in EC from the Ramaiah Institute of Technology in 2013, his M.S. in Electrical Engineering from NC State in 2015, and his Ph.D. in Computer Science from NC State in 2019.

During his Ph.D., he worked on actionable analytics for software engineering and developed XTREE, an algorithm that goes beyond prediction to generate insights that can assist decision making. He also has worked on developing a data mining technique called "Bellwethers" that generates insights even when sufficient data is not available.

Dr. Krishna is currently a Post-Doctoral fellow at Columbia University, where his research explores ways in which machine learning and artificial intelligence can be used for software testing.

DOCTOR of PHILOSOPHY

RUSSELL MEREDITH

Dissertation: *Increasing Network Resilience to Persistent OSPFv2 Attacks through Automated Network Recovery*

Committee Co-Chairs: Douglas Reeves, Ph.D. and
Rudra Dutta, Ph.D.

Russell Meredith was born in Winston-Salem, NC. He received a B.A. from Elon University in both Computer Information Systems and Political Science.

Russell moved to Raleigh, NC in 2012 to pursue his M.S. of Computer Networking degree. Upon completing his M.S., he went on to pursue his Ph.D. in Computer Science, in the area of network security, specifically in the field of network resilience.

While not otherwise engaged with his Ph.D. research, Russell was actively engaged in the Computer Science Dept. He devoted a great deal of time to mentoring undergraduates in computer science and was President of the Computer Science Graduate Student Association from 2015-2017. For his efforts, he went on to receive the Computer Science Leadership Award in 2017.

Upon completing his Ph.D. studies, Russell joined Far Ridgeline Engagements as the Chief Technical Officer.

DOCTOR of PHILOSOPHY

SHAOLIANG NIE

Dissertation: *Visualizing Deep Neural Networks in the Text Domain*

Committee Chair: Christopher Healey, Ph.D.

Shaoliang Nie is from China. He grew up in the Hunan Province and went to college at Tianjin University, where he received his B.E. in Engineering.

He came to NC State in 2014 for his M.S. degree, majoring in Computer Science, under the direction of Dr. Christopher Healey. His research focused on visualization and deep learning, where he tried to use visualization to better understand how complex models work.

Upon completing his Ph.D., he moved to the Bay area in CA to work as a Research Scientist at Facebook, where he spends his normal working days missing the greenery in North Carolina.

DOCTOR of PHILOSOPHY

KALPESH PADIA

Dissertation: *Storyline Visualization Techniques for Linear, Non-Linear, and Diegetic Narratives*

Committee Chair: Christopher Healey, Ph.D.

Kalpesh Padia grew up in Bhilai, the Steel City of India. He received his B.S. in Computer Science and Engineering from PES University in Bangalore, India. His undergraduate research in sensor networks earned him a summer research fellowship at Old Dominion University, VA from where he also received his M.S. in Computer Science.

Upon completing his M.S., Kalpesh enrolled in the Ph.D. program at NC State to pursue his passion for data visualization under the direction of Dr. Christopher Healey. Under his guidance, Kalpesh conducted research in visualization, text analytics, and neural networks. For his dissertation, he developed novel visualizations to aid the understanding and exploration of various real and potential narrations within a story. He has published and presented his research at various venues and has been awarded five patents.

Upon the completion of his dissertation, Kalpesh moved to San Jose, CA to work at eBay. His work there focuses on developing a distributed firewall running on a microservices architecture and developing visualizations for advanced data analytics.

Besides developing systems, Kalpesh also enjoys teaching and hopes to return to academia to teach someday.

DOCTOR of PHILOSOPHY

YUEPENG QI

Dissertation: *Performance Analysis and Modeling of a Cooperative Amplify-and-forward Scheme for MIMO WLANs*

Committee Chair: Mihail Sichitiu, Ph.D.

Yuepeng grew up in Hailin, Heilongjiang, China. He received a B.E. in Software Engineering from Xian Jiaotong University (XJTU), in Xian, China, and a M.S. in IT Convergence Engineering from Pohang University of Science and Technology (POSTECH), Pohang, Republic of Korea, in 2011 and 2014, respectively.

He pursued his Ph.D. in Computer Science at NC State from 2014 to 2019, under the direction of Dr. Mihail Sichitiu. His research interests include PHY and MAC layers of wireless networks in general, and IEEE 802.11 networks in particular.

Yuepeng is currently a member of the Technical Staff at NetApp in RTP, NC.

DOCTOR of PHILOSOPHY

AKOND ASHFAQUE UR RAHMAN

Dissertation: *Anti-patterns in Infrastructure as Code*

Committee Chair: Laurie Williams, Ph.D.

Akond Rahman was born in Chittagong, Bangladesh. He spent most of his childhood in Dhaka, Bangladesh. He completed his undergraduate studies in Bangladesh and graduated with a B.S. in Computer Science from Bangladesh University of Engineering and Technology. Before coming to NC State, Akond graduated with a M.S. in Computer Science and Engineering from the University of Connecticut. He then began his Ph.D. at NC State under the direction of Dr. Laurie Williams.

Akond's research interests included DevOps, Software Security, and Software Analytics. He won the Microsoft Open Source Challenge Award in 2016, the ACM SIGSOFT Doctoral Symposium Award at ICSE in 2018, and the ACM SIGSOFT Distinguished Paper Award at ICSE in 2019. During his Ph.D., he collaborated with industry practitioners from ABB, IBM, Mozilla, RedHat, and others.

Currently Akond is an Assistant Professor at Tennessee Tech University, doing research related to software security. He also has taught undergraduate and graduate students data mining and machine learning techniques.

Akond is grateful to his family members for their consistent support. He is also grateful to his dissertation committee members who have mentored him throughout his entire Ph.D. career at NC State. Akond thanks his advisor, Laurie Williams, whose constant guidance made his Ph.D. tenure enjoyable and productive. Akond also thanks two software engineering professors, Chris Parnin and Tim Menzies, who have mentored him on multiple publications.

DOCTOR of PHILOSOPHY

KARTHIK   SHESHADRI

Dissertation: *Toward a Unified Model of News Influence on Public Interest and Legislation*

Committee Chair: Munindar Singh, Ph.D.

Karthik Sheshadri grew up in Bangalore, India, where he received his B.E. from the RV College of Engineering. He moved to the US in 2011 to attend Carnegie Mellon University, where he received his M.S. in Robotics.

In 2015, he began his Ph.D. at NC State, under the direction of Dr. Munindar Singh. His research focused on developing computational patterns and models of political and social science phenomena. During his Ph.D., he interned at multiple companies working on NLP and Machine Learning.

Upon completing his Ph.D., Karthik moved to the Bay area in CA to begin a Senior Engineering position in NLP.

DOCTOR of PHILOSOPHY

JUSTIN STEPHEN SMITH

Dissertation: *Understanding How Software Developers Resolve Security Vulnerabilities with Static Analysis*

Committee Co-Chairs: Emerson Murphy-Hill, Ph.D. and
Kathryn Stolee, Ph.D.

Justin Smith grew up in Mayville, NY. In 2014, he received his B.A. in Mathematics and Computer Science with honors from Hamilton College in Clinton, NY. He began pursuing his Ph.D. in Computer Science at NC State in 2014, under the direction of Dr. Emerson Murphy-Hill.

His research, at the intersection of software engineering, human-computer interaction, and security, focuses on the human aspects of software development.

Upon completing his Ph.D., Justin moved to the greater New York City area. He is currently an Assistant Professor of Computer Science at Lafayette College in Easton, PA.

DOCTOR of PHILOSOPHY

ANDREW   JOHN   van der POEL

Dissertation: *Approaches for Graphs Near Structural Classes*

Committee Chair: Blair Sullivan, Ph.D.

Drew van der Poel was born in 1992 in Kingston, NY, where he grew up. He attended the College of Saint Rose in Albany, NY from 2010 to 2014, where he double-majored in Computer Science and Mathematics, and received a B.S. degree.

He moved to Raleigh, NC and began his Ph.D. in 2014 at NC State, under the direction of Dr. Blair Sullivan. His research focused on graph modification algorithms, with an emphasis on working with graphs near structural classes.

Upon completing his Ph.D., Drew is now working as a Lecturer at Northeastern University in Boston, MA.

DOCTOR of PHILOSOPHY

ANDREA VILLANES ARELLANO

Dissertation: *Epidemiological Disease Surveillance Using Public Media Text Mining*

Committee Co-Chairs: Christopher Healey, Ph.D. and
Michael Rappa, Ph.D.

Andrea Villanes Arellano was born on October 16, 1984 in Lima, Peru. She received her B.S. in Computer Science from the Pontificia Universidad Catolica del Peru in 2008.

Andrea moved to Raleigh, NC in 2008 to begin her graduate studies at NC State. She received two M.S. degrees, one in Analytics and the other in Computer Science. In 2014, Andrea began her Ph.D. in Computer Science at NC State, to deepen her knowledge in text mining, sentiment analysis, and visualization techniques.

Upon completing her Ph.D., Andrea will join the Institute of Advanced Analytics at NC State as a Teaching Assistant Professor, where she will pursue her passion for teaching the next generation of data scientists.

DOCTOR of PHILOSOPHY

RUI ZHI

Dissertation: *Design and Evaluation of Instructional Supports for Novice Programming Environments*

Committee Co-Chairs: Tiffany Barnes, Ph.D. and
Thomas Price, Ph.D.

Rui Zhi was born in Guizhou, China, and received his B.E. in Computer Science from Beijing University of Chemical Technology in 2014. In the same year, he moved to Raleigh, NC and started his Ph.D. journey in Computer Science at NC State, under the direction of Dr. Tiffany Barnes and Dr. Thomas Price.

His research focused on Computer Science education. He applied theories from Cognitive Science and Educational Psychology into Computer Science to teach novices programming. During his Ph.D., he had three internships, co-authored and published fourteen papers and presented his work at several conferences.

Upon completing his Ph.D., Rui moved to Menlo Park, CA and joined Facebook as a Research Scientist.

MASTER of SCIENCE
THESIS

Shrey Anand
Content-Based Creative Suggestions for User Queries
Chair: Munindar Singh, Ph.D.

Abhisha Bhattacharyya
*Evaluating Generalized Path Queries by Integrating Algebraic Path Problem
Solving with Graph Pattern Matching*
Chair: Kemafor Anyanwu Ogan, Ph.D.

Amanul Haque
*Prioritizing Blended Course Discussion Forum Posts Using Linguistic Features
and Metadata with Limited Labelled Instances*
Chair: Collin Lynch, Ph.D.

Laxmikant Kishor Mokadam
*FLEET: Flexible Efficient Ensemble Training for Heterogeneous Deep Neural
Networks*
Chair: Xipeng Shen, Ph.D.

Rasika Pande
Automating the Extraction and Evaluation of Comments in Source Code
Chair: Collin Lynch, Ph.D.

Vivek
LocalMine—Probabilistic Keyword Model for Software Text Mining
Chair: Tim Menzies, Ph.D.

MASTER of SCIENCE
NON-THESIS

Niki Gitinabard
Farzaneh Khoshnevisan
Ruth Okoilu
Markel Sanz Ausin
Fogo Tunde-Onadele

MASTER of SCIENCE in COMPUTER NETWORKING
NON-THESIS

Surya Ahuja
Tapas Mallick
Nithyesh Sankararaman
Prithvi Sharan
Nandita Srinivasan

MASTER of COMPUTER SCIENCE

Mohammad Aboufoul
Niharika Uday Acharya
Chiranjivi Agarwal
Shefali Deepak Agarwal
Harsh Agrawal
Qaiss Khan Alokozai
Ayush Arnav
Abhishek Arya
Ginger Balmat
Bradley Beach
Srilatha Bekkem
Shraddha Bhadauria
Priyankha Bhalasubbramanian
Deepali Chandrakant Bharmal
Rashik Bhasin
Jagan Cherukuru Agribabu
Rayan Dasoriya
Jaymin Desai
Bhargav Deshpande
Mrunmayi Deshpande
Tushar Dey
Sayali Vinayak Dhavale
Darpan Dodiya
Erika L. Eill
Xiaohui Zheng Ellis
Xuejiao Fang
Darshana Gadre

Justin Giguere
Anupam Godse
Kushagr Gupta
Prachi Gupta
Will Henline
Rahul Iyer
Ayush Jain
Mohit Jain
Pratik Kumar Kundanmal Jain
Shrijeet Jagadishchandra Joshi
Sanjana Kacholia
Shwetha Kalyanaraman
Prashanthi Kanniappan Murthy
Mohsin Karovaliya
Sharique Khan
Wanjing Kuang
Mandhani Kushal
Tammy Le
Zecao Lu
Hanyu Luo
Xiao Ma
Siddu Madhure Jayanna
Anjali Malunjkar
Aaron Margolese-Malin
Vato Maskhulia
Matt McNiece
Shivani Mehendarge

MASTER of COMPUTER SCIENCE
(continued)

Julia Minton
Akanksha Mohan
Arvind Mohan
Sai Vishnu Muvvala
Varsha Nagarajan
Manogna Nalluri
Tanmaya Nanda
Rajat Narang
Sushmitha Natanasabapathy
Natansh Negi
Cameron Nelson
Fatema Olia
Nikita Pramod Paranjape
Abhishek Pareek
Harsh Jatinbhai Patel
Vishrut Patel
Subha Sekhar Reddy Pereddy
Vandan Phadke
Anthony Polakiewicz
Rishi Rai
Aseem Raina
Roshni Rajan
Ravindersingh Rajpal
Javan Rajpopat
Akshay Pradeep Raul
Avanthikaa Ravichandran
Ravi Ravuri
Luke Roosje
Ravi Sanker
Mohit Satarkar

Aayush Saxena
Akshay Saxena
Nitish Sekar
Rahul Sethi
Harsh Rajendra Shah
Varun Shah
Aniruddha Shamasundar
Pranjal Sharma
Prasad Umakant Shende
Suraj Siddharudh
Hiral Singadia
Prayani Singh
Bharat Sinha
Amal Sony
Jerry Sun
Nida Syed
Nawshin Tabassum
Ran Tan
Yue Tan
Nikolay Titov
Abhishek Tripathi
Yashad Trivedi
Purva Vasudeo
Mohit Manoj Vinchoo
Gautam Worah
Ziwei Wu
Jianshu Zhang
Linfeng Zhou
Rui Zhu

BACHELOR of SCIENCE

Degree Conferred June 20, 2019

Surag Baichwal
Juan Luis Rodriguez Cruz
Joseph Warren Stanley **

Degree Conferred July 30, 2019

Kevin Mitchel Alvarez ***

Degree to be Conferred December 20, 2019

Maryam Mohammed Aljeshi
Islahuddin Arshad **
Soumya Sayam Bagade **
Casey Belcher *
Robert Eugene Bliss III + **
Colton Gregory Botta *** @
Nathaniel Garrett Brooks ***
Giovanni Riyanto Budi +
Matthew Allen Chaffee ***
Huan Chang *
Jianlin Chen
Carl Thomas Colglazier *** +
Luke Morgen Cunningham **
Joshua Logan Davis ** Γ
William Fay Duke *
Samuel Austin Ebert ***
Ross Mitchell Eby
Michael Wilson Elias Jr.
Nat Dean Ellis III
Benjamin Gale
Travis J. Gnapinski
Cameron Patrick Greene *
Daniel Grist
Boram Han ***
Hailey E. Hendrix
Dustin Ryan Hollar
Peter Holton *** Γ +
Stuart Andrew Hunt ***
Forrest Eli Hurley ***

Amalan Krishna Iyengar ***
Louis Jacobowitz *** +
Dakota Ryan Johnson * Γ
Muhammad Taha Karimi *
Daniel Shene Kenline ***
Shreyas Kuloor ***
Phoebe Jeehye Lee **
Junyan Li *
Tianming Liu
Yaswanth Malleedi ***
Michael Mcmillan
Daniel Scott Mickens
Daniel Easton Mills
Daniel Paul Moody
Colin Andrew Moore ***
Chee Weng Ng *
Stanton Trygve Parham *** +
Zachary David Raboin ***
Vincent T. Renich *** +
Jonathan Tyler Rockett ***
Eugenio Sarritzu Abreu **
Jeremy Paul Schmidt ***
Benjamin Earl Seifert ***
Ximin She ***
Jenna Nicole Shockley **
Isabelle Louise Snyder ***
Michael David Stiles
Justin Lacey Talarek
Maanasa Thyagarajan
Noah Michael Trimble ***
Adam Douglas Wall
Jasmine Florence Wang *** @
Courtney Weglar *** @ ~
Caitlyn J. Wiley ***
Robert Daniel Willenborg
Herman Workman *
Minglun Zhang **
Wenting Zheng ***

Bachelor of Science with Honors

*** - Summa cum laude (with highest honor), 3.75—4.0 GPA, gold sash.
** - Magna cum laude (with high honor), 3.5 – 3.74 GPA, silver sash.
* - Cum laude (with honor), 3.25 – 3.499 GPA, white sash.
Γ - Bachelor of Science in CSC with Game Development Concentration.
+ - Co-majors (students graduating with one or more degrees outside of
       Computer Science).
@ - Computer Science Student Ambassador.
~ - Computer Science Marshal.

Computer Science Honors Program

Recipients of the Bachelor of Science in Computer Science with Honors have maintained a minimum GPA of 3.5 while completing a challenging program of computer science undergraduate study, including an honors thesis with a supervising professor.

Islahuddin Arshad
On Deaccelerating a Brute-Force Attack through Database Shuffling and Other Methods
Honors Advisor: Jason King, Ph.D.

Dustin Ryan Hollar
FPGA Adaptive Displays
Honors Advisor: Benjamin Watson, Ph.D.

Forrest Eli Hurley
Algorithm Design and Visualizations for RNA Folding Ensembles
Honors Advisor: Blair D. Sullivan, Ph.D.

Amalan Krishna Iyengar
Acoustic Navigation
Honors Advisor: Rudra Dutta, Ph.D.

Colin Andrew Moore
Decentralized Peer to Peer Computation Utilizing a Merkle DAG and Merkle Patricia Tree
Honors Advisor: Douglas Reeves, Ph.D.

Jonathan Tyler Rockett
Fuzz Testing Solutions
Honors Advisor: Christopher Parnin, Ph.D.

Isabelle Louise Snyder
Investigation of Statistics and Learning Patterns in Learning by Teaching Data
Honors Advisor: Noboru Matsuda, Ph.D.

Wenting Zheng
Nature-Inspired Computation with Julia
Honors Advisor: Steffen Heber, Ph.D.

University Scholars Program

The University Scholars Program encourages students to excel academically in their majors while receiving a B.S. degree. The program requires individuals to complete a minimum of 21 hours of honors coursework while maintaining a "B" average, and graduating with an overall GPA of at least a 3.25.

Stanton Trygve Parham
Jenna Nicole Shockley
Joseph Warren Stanley
Courtney Weglar

University Honors Program

In order to be recognized as a University Honors Program graduate, students must complete a minimum of 12 credits of honors seminars, complete a six-credit "Capstone Experience", and maintain a cumulative GPA of 3.25 or higher.

Soumya Sayam Bagade
Colton Gregory Botta
Carl Colglazier
Stuart Andrew Hunt
Amalan Krishna Iyengar
Louis Jacobowitz
Jonathan Tyler Rockett
Isabelle Louise Snyder

Park Scholars

A four-year scholarship covering tuition, fees, room, board, books, supplies, travel, and personal expenses.

Amalan Krishna Iyengar
Shreyas Kuloor
Jasmine Florence Wang

Valedictorians
(4.0 GPA)

Kevin Mitchel Alvarez
Colton Gregory Botta
Nathaniel Garrett Brooks
Matthew Allen Chaffee
Carl Thomas Colglazier
Samuel Austin Ebert
Stuart Andrew Hunt
Forrest Eli Hurley
Amalan Krishna Iyengar
Louis Jacobowitz
Stanton Trygve Parham
Vincent T. Renich
Benjamin Earl Seifert
Isabelle Louise Snyder
Noa Michael Trimble
Jasmine Florence Wang
Courtney Weglar

COMPUTER SCIENCE FACULTY

Barbara J. Adams, Ph.D.
Bita Akram, Ph.D.
Kemafor Anyanwu Ogan, Ph.D.
Dennis R. Bahler, Ph.D.
Suzanne Balik, Ph.D.
Tiffany Barnes, Ph.D.
Tzvetelina Battestilli, Ph.D.
Donald L. Bitzer, Ph.D.
Franc Brglez, Ph.D.
Min Chi, Ph.D.
Rada Y. Chirkova, Ph.D.
Anupam Das, Ph.D.
Ignacio Dominguez, Ph.D.
Jon Doyle, Ph.D.
Patrick Dreher, Ph.D., M.B.A.
Rudra Dutta, Ph.D.
William Enck, Ph.D.
Vincent W. Freeh, Ph.D.
Edward F. Gehringer, Ph.D.
Xiaohui (Helen) Gu, Ph.D.
Khaled Harfoush, Ph.D.
Christopher G. Healey, Ph.D.
Steffen Heber, Ph.D.
Sarah S. Heckman, Ph.D.
Margaret R. Heil, M.S.
Jamie A. Jennings, Ph.D.
Arnav Jhala, Ph.D.
Guoliang Jin, Ph.D.
Alexandros Kapravelos, Ph.D.
Jason King, Ph.D.
Dana Lasher, B.S.
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Collin Lynch, Ph.D.
ToniAnn Marini, M.Ed.

Chris Martens, Ph.D.
Noboru Matsuda, Ph.D.
Timothy Menzies, Ph.D.
Patrick Morrison, Ph.D.
Frank Mueller, Ph.D.
John-Paul Ore, Ph.D.
Christopher Parnin, Ph.D.
Harry Perros, Ph.D.
Thomas Price, Ph.D.
Michael Rappa, Ph.D.
Bradley Reaves, Ph.D.
Douglas S. Reeves, Ph.D.
David L. Roberts, Ph.D.
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Alessandra Scafuro, Ph.D.
Jessica Schmidt, Ph.D.
Muhammad Shahzad, Ph.D.
Donald Sheehy, Ph.D.
Xipeng Shen, Ph.D.
Munindar P. Singh, Ph.D.
Matthias Stallmann, Ph.D.
Kathryn T. Stolee, Ph.D.
David Sturgill, Ph.D.
Blair D. Sullivan, Ph.D.
Raju Vatsavai, Ph.D.
Mladen A. Vouk, Ph.D.
Benjamin Watson, Ph.D.
Laurie Williams, Ph.D.
R. Michael Young, Ph.D.
Ruozhou Yu, Ph.D.

COMPUTER SCIENCE STAFF

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Susan Uy, B.A.
Gary Weinberg, Ed.D.
Lauren Williamson, B.S.
David Wright, Ph.D.

MARSHALS

Sonali Karmalkar, *senior*
Carl Klier, *senior*
Sarah Korkes, *senior*
Evan LaFontaine, *sophomore*
Oscar Molina, *senior*
Neill Robson, *senior*

PHOTOGRAPHY / VIDEO

Photo Specialties, a professional photographer, will take each graduate's picture as they are handed the diploma. A free color proof will be sent to each graduate's current mailing address, including a password for online viewing. There is no obligation to purchase prints. To receive email notification when photos are online, please visit www.photospecialties.com to pre-register. If a proof is not received within a week of the ceremony, please contact info@photospecialties.com or call 1-800-722-7033.

For the benefit of relatives and friends who may not be able to attend the event in person, we are pleased to announce that the event will be available online via **live video streaming at http://go.ncsu.edu/csc-diploma**. Firefox, Internet Explorer, and Safari are recommended for viewing the live streaming of the ceremony.

The Department of Computer Science thanks

BlueCross BlueShield of North Carolina

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and

NC State Engineering Foundation

for sponsoring our Fall 2019
diploma ceremony. Their generous
support benefits the students, faculty,
and staff of the department.

Our sponsors join us in congratulating the
Fall 2019 North Carolina State University
Computer Science graduates.