Kendall Giles

Collegiate Assistant Professor · Department of Electrical and Computer Engineering
Virginia Tech · Blacksburg, VA 24061
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Appointments

Virginia Tech, Collegiate Assistant Professor, Electrical and Computer Engineering June 2020+

Virginia Tech, Assistant Professor of Practice, Electrical and Computer Engineering August 2016–June 2020

Virginia Tech, Instructor, Electrical and Computer Engineering May–August 2016

US Department of Veterans Affairs Accelerated Learning Program through True Information Assurance LLC through Orions Arrow Inc, Instructor September 2015–May 2016

Johns Hopkins University Human Language Technology Center of Excellence (HLTCOE), Research Scientist June–August 2015

Johns Hopkins University Human Language Technology Center of Excellence (HLTCOE), Research Scientist June–August 2009

Virginia Commonwealth University, Assistant Professor, Statistical Sciences and Operations Research January 2008–August 2011

University of California–Los Angeles Institute for Pure and Applied Mathematics, Faculty Mentor and Research Fellow June–December 2007

The College of William and Mary Visiting Assistant Professor, Mathematics January 2006–May 2007

Virginia Commonwealth University, Adjunct Instructor and Graduate Teaching Assistant, Information Systems August 1998–December 2001

Education

Computer Science, Johns Hopkins University, PhD May 2007

Dissertation: *Knowledge Discovery in Computer Network Data: A Security Perspective*

Science Technology and Society, Virginia Tech, MS December 2020

Creative Writing, University of Southern Maine, MFA January 2013

Computer Science, Johns Hopkins University, MS May 2004

Information Systems, Virginia Commonwealth University, MS August 2002

Electrical Engineering, Purdue University, MS May 1993

Electrical Engineering, Virginia Tech, BS May 1991

Industry

Orions Arrow, Inc, Computer Systems Architect August 2011–May 2016

Raytheon Systems, Falls Church, Virginia, Senior Systems Engineer May 2001–November 2005

CUNA Mutual Credit Union and American Family Insurance (through SPR Technology Consultants)
Milwaukee, Wisconsin, Software Engineer February 1996–August 1998

GE Medical Systems, Milwaukee, Wisconsin, Software Engineer August 1992–February 1996

Virginia Tech Teaching

Graduate

Current Total Graduate Students Taught at VT: 1,243
Current Graduate SPOT Average: 5.78

ECE 5484 Fundamentals of Computer Systems, 27 students, SPOT 5.79, Fall 2023.

ECE 5480 Cybersecurity and the IoT, 44 students, SPOT 5.62, Fall 2023.

ECE 5480 Cybersecurity and the IoT, 27 students, SPOT 5.95, Summer 2023.

ECE 5494 Innovation Pathways in Artificial Intelligence and Machine Learning, 49 students, SPOT 5.90, Spring 2023.

ECE 5480 Cybersecurity and the IoT, 44 students, SPOT 5.86, Spring 2023.

ECE 5480 Cybersecurity and the IoT, 44 students, SPOT 5.82, Fall 2022.

ECE 5480 Cybersecurity and the IoT, 31 students, SPOT 5.95, Summer 2022.

ECE 5494 Innovation Pathways in Artificial Intelligence and Machine Learning, 59 students, SPOT 5.76, Spring 2022.

ECE 5480 Cybersecurity and the IoT, 57 students, SPOT 5.83, Spring 2022.

ECE 5480 Cybersecurity and the IoT, 69 students, SPOT 5.80, Fall 2021.

ECE 5480 Cybersecurity and the IoT, 42 students, SPOT 5.81, Summer 2021.

ECE 5480 Cybersecurity and the IoT, 62 students, SPOT 5.76, Spring 2021.

ECE 5494 Innovation Pathways in Artificial Intelligence and Machine Learning, 37 students, SPOT 5.69, Spring 2021.

ECE 5480 Cybersecurity and the IoT, 41 students, SPOT 5.82, Fall 2020.

ECE 5480 Cybersecurity and the IoT, 29 students, SPOT 5.96, Summer 2020.

ECE 5984 SS: Innovation Pathways in Artificial Intelligence and Machine Learning, 69 students, SPOT 5.85, Spring 2020.

ECE 5480 Cybersecurity and the IoT, 83 students, SPOT 5.83, Spring 2020.

ECE 5480 Cybersecurity and the IoT, 34 students, SPOT 5.86, Fall 2019.

ECE 5480 Cybersecurity and the IoT, 55 students, SPOT 5.85, Spring 2019.

ECE 5484 Fundamentals of Computer Systems, 48 students, SPOT 5.62, Spring 2019.

ECE 5480 Cybersecurity and the IoT, 27 students, SPOT 5.65, Fall 2018.

ECE 5484 Fundamentals of Computer Systems, 53 students, SPOT 5.70, Fall 2018.

ECE 5480 Cybersecurity and the IoT, 30 students, SPOT 5.70, Spring 2018.

ECE 5484 Fundamentals of Computer Systems, 45 students, SPOT 5.94, Spring 2018.

ECE 5484 Fundamentals of Computer Systems, 43 students, SPOT 5.71, Fall 2017.

ECE 5984 SS: Cybersecurity and the IoT, 13 students, SPOT 5.67, Fall 2017.

ECE 5984 SS: Cybersecurity and the IoT, 58 students, SPOT 5.74, Spring 2017.

ECE 5484 Fundamentals of Computer Systems, 23 students, SPOT 5.53, Fall 2016.

Virginia Tech Undergraduate

Current Total Undergraduate Students Taught at VT: 175
Current Undergraduate SPOT Average: 5.52

ECE 2514 Computational Engineering, 54 students, SPOT 5.61, Fall 2021.

ECE 2514 Computational Engineering, 88 students, SPOT 5.63, Fall 2020.

CS 4264 Principles of Computer Security, 33 students, SPOT 5.33, Spring 2017.

Virginia Tech Outreach

TechGirls 2019 Cybersecurity Workshop, 33 students, July 15-18, 2019.

TechGirls 2019 Cybersecurity Workshop, 28 students, July 20-23, 2019.

Virginia Tech Course Creation and Redesign

ECE 5494 Innovation Pathways in AI and Machine Learning, creation, Fall 2019.

ECE 5585 Security & Trust I, redesign with Randy Marchany, Summer 2017.

ECE 5586 Security & Trust II, redesign with Dave Raymond, Summer 2017.

ECE 5480 Cybersecurity and the IoT, creation, Fall 2016.

ECE 5484 Fundamentals of Computer Systems, redesign, Summer/Fall 2016.

Virginia Tech Student Advising

Aseem Sangwan, ECE MENG, Final Project: "Studying Rowhammer Attacks in DRAMs Using Software-Based Techniques", Chair: Haining Wang, Committee Members: Kendall Giles, Paul Plassmann, December 2023.

Abilesh Sundarasamy, ECE MS, Thesis: "Remote Software Guard Extensions (RSGX)", Chair: Binoy Ravindran, Committee Members: Kendall Giles, Xiaoguang Wang, December 2023.

Antorip Sahu, ECE MS, Thesis: "Gated Transformer-Based Architecture for Automatic Modulation Classification", Co-Chairs: Carl Dietrich, Creed Jones, Committee Member: Kendall Giles, December 2023.

Manthan Shah, ECE MENG, Final Project: "To analyze the performance of inference of YOLOv7 from a systems perspective to identify opportunities of optimization", Chair: Creed Jones, Committee Members: Kendall Giles, Dimitrios Nikolopoulos, August 2023.

Mohamed Husain Noor Mohamed, ECE MS, Thesis: "CRIU RTX: Remote Thread eXecution using Checkpoint/Restore in Userspace", Chair: Binoy Ravindran, Committee Members: Kendall Giles, Xiaoguang Wang, June 2023.

Shubham Ghosh, ECE MENG, Final Project: "Cache Side Channel Attack on Intel SGX Programs", Chair: Wenjie Xiong, Committee Members: Kendall Giles, Creed Jones, May 2023.

Prateek Kammili, ECE MENG, Final Project: "Acoustic Attack on VR Headsets", Chair: Wenjie Xiong, Committee Members: Kendall Giles, Dimitrios Nikolopoulos, May 2023.

Saurabh Kuruvila, ECE MENG, Final Project: "Effects of Electromagnetic Fault Injection on DRAM PUFs", Chair: Linbo Shao, Committee Members: Kendall Giles, Wenjie Xiong, May 2023.

Ameya Hallur, ECE MENG, Final Project: "Wall Following on an F1Tenth Car", Chair: Haibo Zeng, Committee Members: Kendall Giles, Wenjie Xiong, May 2023.

Shano Ezzell, ECE MENG, Final Project: "Maritime Communications System using Blockchain", Chair: Angelos Stavrou, Committee Members: Kendall Giles, Nishithkumar Tripathi, May 2023.

Deniz Aytemiz, ECE MENG, Final Project: "Bimodal Deep Learning Architecture for Malware Classification", Chair: Creed Jones, Committee Members: Kendall Giles, Angelos Stavrou, May 2023.

Aaron Travasso, ECE MENG, Final Project: "MISD Timed Chess to simulate Parallel Functioning of the Brain", Chair: JoAnn Paul, Committee Members: Kendall Giles, Nektaria Tryfona, April 2023.

Samruddhi Chavan, ECE MEng, Final Project: "Malware Detection using Machine Learning", Chair: Scot Ransbottom, Co-Chair: Randy Marchany, Committee Members: Paul Plassmann, Kendall Giles; Virginia Tech, December 2022.

Shiva Alapati, ECE MEng, Final Project: "Leaf Disease Classification", Chair: Creed Jones, Committee Members: Tom Martin, Kendall Giles; Virginia Tech, December 2022.

Kashi Vishwanath Kolloju, ECE MEng, Final Project: "Structural Health Monitoring of Inflatable Habitats", Chair: Tom Martin, Committee Members: Kendall Giles, Haibo Zheng; Virginia Tech, December 2021.

Niu Yuan, ECE MEng, Final Project: "Autonomous Robotic Mapping and Navigation using ROS and Gazebo", Chair: Creed Jones, Committee Members: Kendall Giles, Vassilios Kovanis; Virginia Tech, December 2021.

Jielong Cong, ECE MEng, Final Project: "Online Shopping System with Search Engine and Recommendation Engine based on fastText and Word2vec", Chair: Yue Wang, Committee Members: Kendall Giles, Lynn Abbott; Virginia Tech, December 2021.

FNU Sachin, ECE MEng, Final Project: "Input Data Pipeline Analysis of TensorFlow Models", Chair: Changwoo Min, Committee Members: Kendall Giles, Cameron Patterson; Virginia Tech, May 2021.

Aayush Sureshchander, ECE MEng, Final Project: "mmFace: A Novel Face Verification Method Using mmWave Radar", Chair: Creed Jones, Committee Members: Kendall Giles, Bo Ji; Virginia Tech, May 2021.

Pooja Sharma, ECE MEng, Final Project: "Model Inversion Attack Using Improved Techniques", Chair: Ruoxi Jia, Committee Members: Kendall Giles, Paul Plassmann; Virginia Tech, May 2021.

Funding

Faculty Writing Group Grant, Janet Abbate (PI), Andrea Bertke, Marcía F. Feuerstein, Kendall Giles, Mahmood Khan, Fabian Prieto-Nanez, Laura Strube, Robert Weissdd, Ariana Wyatt, Stephanie E. Zick, 2021-2022, Virginia Tech Office of the Executive Vice President and Provost, $2,000.00, August 2021–August 2022.

Virginia Open Data and Technology Course Platform, Virginia Tech Provost's Office, $50,000, PI, October 2018–October 2019.

Virginia Open Data and Technology Course Curriculum, UVA Provost's Office, $50,000, PI is Catherine Anderson, Associate Director of Executive & Continuing Education, Data Science Institute, University of Virginia. October 2018–October 2019.

TechGirls Cybersecurity Summer Camp, College of Engineering, Legacy International, U.S. State Department, $20,000, 15–23 July 2019.

Mentoring Program Project Grant, Virginia Tech Provost's Office, $1,500, PI. December 2016–May 2018.

Course Design and Development Award to redesign ECE 5585 Security & Trust I, $9,500 split 50% with co-awardee Randy Marchany, Master of Information Technology Program, Virginia Tech, April 2017.

Course Design and Development Award to redesign ECE 5586 Security & Trust II, $9,500 split 50% with co-awardee David Raymond, Master of Information Technology Program, Virginia Tech, April 2017.

Course Design and Development Award to redesign ECE 5484 Fundamentals of Computer Systems, $9,500, Master of Information Technology Program, Virginia Tech, May 2016.

A Hierarchical and Iterative System for the Analysis of Streamed Text Data, Human Language Technology Center for Excellence, Baltimore, Maryland, $7,512, PI, May–September 2008.

The Design and Implementation of a System for Fusion and Inference from Multiple Disparate Data Sources, Johns Hopkins University, $102,560, PI, June 2009–May 2014.

Awards

Certificate of Teaching Excellence, College of Engineering, Virginia Tech, Blacksburg, Virginia, May 2022.

Summer Camp for Applied Language Exploration (SCALE) workshop, Johns Hopkins University, Baltimore, Maryland, June–August 2015.

Short story "Here to Help" was displayed as a part of the international invitational ThinkSmall7 art exhibition in Richmond, Virginia, October–December 2013.

Invited to read short story "Searching" at the international invitational ThinkSmall6 art exhibition at the Artspace gallery in Richmond, Virginia, 2011.

Short story "A Delicate Touch" won the Raw Dog Screaming Press Retrospective Writing Contest, Judged by Dr. Michael Arnzen, October 2010.

Summer Camp for Applied Language Exploration (SCALE) workshop, Johns Hopkins University, Baltimore, Maryland, June–August 2009.

Virginia's Center for Innovative Technology (CIT) Award, $2,500, 1999.

Graduate Teaching/Research Assistantship Award, Virginia Commonwealth University, Richmond, Virginia, 1998–1999, 1999–2000, 2000–2001.

GE Night Out on the Town, GE Medical Systems, Milwaukee, Wisconsin, 1995.

C.T. Tate University Distinguished Co-op Award, Virginia Tech, Blacksburg, Virginia, 1991.

Litton Industries Scholarship, 1990–1991.

Engineering Study Abroad Scholarship, (Switzerland, Germany), Virginia Tech, Blacksburg, Virginia, 1990.

Association of Old Crows Scholarship, 1988–1989.

Publications

Journal Articles

Giles, Kendall, Michael Trosset, David Marchette, and Carey Priebe. "Iterative Denoising," *Computational Statistics*, 23:4, October, 2008.

Fishkind, D., C. Priebe, Kendall Giles, L. Smith, and A. Aksakalli. "Disambiguation Protocols Based on Risk Simulation," *IEEE Transactions on Systems, Man, and Cybernetics, Part A*, 37:5, 814-823, September, 2007.

Osei-Bryson, K. and Kendall Giles. "Splitting Methods for Decision Tree Induction: An Exploration of the Relative Performance of Two Entropy-Based Families," *Information Systems Frontiers Journal*, 8:195-209, Springer, July 2006.

Osei-Bryson, K. and Kendall Giles. "An Exploration of a Set of Entropy-Based Hybrid Splitting Methods for Decision Tree Induction," *Journal of Database Management*, 15:3, 2004.

Bryson, K., Kendall Giles, and B. Kositanurit. "Exploration of a Hybrid Feature Selection Algorithm," *Journal of the Operational Research Society*, 54:7, 790-797, 2003.

Giles, Kendall, "Understanding Ancient Martial Arts Texts: Pooh and Hermeneutics," *InYo: The Journal of Alternative Perspectives on the Martial Arts and Sciences*, December, 2000.

Conference Proceedings

Giles, Kendall, D. Marchette, and C. Priebe. "A Model of Backscatter as Escher Tessellations," *2005 Proceedings of the American Statistical Association, Statistical Graphics Section and Section on Statistics in Defense and National Security [CD-ROM]*, Alexandria, Virginia: American Statistical Association, 2005.

Giles, Kendall, D. Marchette, and C. Priebe. "On the Spectral Analysis of Backscatter Data," *Proceedings of the Hawaii International Conference on Statistics, Mathematics, and Related Fields*, 2004.

Giles, Kendall, D. Marchette, and C. Priebe. "The Development and Exploration of Online Classifiers for Backscatter from Denial of Service Attacks," *2004 Proceedings of the American Statistical Association, Statistical Computing Section [CD-ROM]*, Alexandria, Virginia: American Statistical Association, 2004.

Giles, Kendall, D. Marchette, and C. Priebe. "A Backscatter Characterization of Denial of Service Attacks," *2003 Proceedings of the American Statistical Association, Statistical Computing Section [CD-ROM]*, Alexandria, Virginia: American Statistical Association, 2003.

Bryson, K. and Kendall Giles. "Splitting Methods for DT Induction: A Comparison of Two Families," *Proceedings of AMCIS 2002 (Americas Conference on Information Systems)*, Dallas, Texas, August 2002.

Bryson, K., and Kendall Giles. "Attribute Discretization for Classification," *Proceedings of AMCIS 2001 (Americas Conference on Information Systems)*, Boston, Massachusetts, August 2001.

Giles, Kendall, K. Bryson, and Q. Weng. "Comparison of Two Families of Entropy-Based Classification Measures with and without Feature Selection," *HICSS (Hawaii International Conference on System Sciences)*, Wailea Maui, Hawaii, January 2001.

Um, D., B. Stankovic, Kendall Giles, T. Hammond, and V. Lumelsky. "A Modularized Sensitive Skin for Motion Planning in Uncertain Environments," *Proceedings of the 1998 IEEE International Conference on Robotics and Automation*, Leuven, Belgium, May 1998.

Technical Reports

Baker, K., Bethard, S., Bloodgood, M., Brown, R., Callison-Burch, C., Coppersmith, G., Dorr, B., Filardo, W., Giles, Kendall, Irvine, A., Kayser, M., Levin, L., Martineau, J., Mayfield, J., Miller, S., Phillips, A., Philpot, A., Piatko, C., Schwartz, L., Zajic, D. "Semantically Informed Machine Translation," *Technical Report No. 002*, Human Language Technology Center of Excellence, Johns Hopkins University, Baltimore, Maryland, January 2010.

Giles, Kendall, D. Marchette, C. Priebe, and D. Waagen. "Iterative Denoising of Computer Network Application Traffic," *Technical Report No. 655*, Department of Applied Mathematics and Statistics, Johns Hopkins University, Baltimore, Maryland, November 2007.

Giles, Kendall, M. Trosset, D. Marchette, and C. Priebe. "Fast Iterative Denoising," *Technical Report No. 653*, Department of Applied Mathematics and Statistics, Johns Hopkins University, Baltimore, Maryland, December 2005.

Review Articles

Giles, Kendall, "Review of Solar, Carlos. *Cybersecurity Governance in Latin America: States, Threats, and Alliances*," H-Sci-Med-Tech, H-Net Reviews, August, 2023, https://www.h-net.org/reviews/showpdf.php?id=59317.

Campos, Leo, Kendall Giles, and Tiffany Smith. 2021. "Tributaries on a Heraclitian River: A Collaborative Review of Joseph Pitt's *Heraclitus Redux*," *Social Epistemology Review and Reply Collective* 10 (5): 6-13, May, 2021, https://wp.me/p1Bfg0-5OA, ISSN 2471-9560.

Giles, Kendall, "Reflections on *Academic Agonies and How to Avoid Them* by Joseph Agassi," *Social Epistemology Review and Reply Collective* 9 (12): 37-39, December, 2020, https://wp.me/p1Bfg0-5zB.

Giles, Kendall, "Expand Your Writing Potential with a Smart Notebook and Pen," ProfHacker Column Guest Post, *The Chronicle of Higher Education*, April 2018.

Other Publications

Giles, Kendall, "6 Life-Changing Ways Your Black Belt Journey Can Transform You," Essay, *Breaking Muscle*, October 2014.

Giles, Kendall, "Here to Help," Flash Fiction, *ThinkSmall7 Art Exhibition*, October-December 2013.

Giles, Kendall, "Rebel Yell," Short Story, Included in the Anthology *Surreal South '13*, published by Press 53, October 2013.

Giles, Kendall, "What Color Is Your Dojo?," Essay, *Breaking Muscle*, July 2012.

Giles, Kendall, "Bartitsu: The Steampunk Mixed Martial Art," Essay, *Breaking Muscle*, October 2012.

Ranked #4 in most popular martial arts articles at *Breaking Muscle* for 2012.

Giles, Kendall, "Parting Thoughts," Essay, *InYo: The Journal of Alternative Perspectives on the Martial Arts and Sciences*, January 2012.

Giles, Kendall, "Understanding Ancient Martial Arts Texts: Pooh and Hermeneutics," Essay, *InYo: The Journal of Alternative Perspectives on the Martial Arts and Sciences*, Reprint, July 2011.

Giles, Kendall, "A Delicate Touch," Short Story, *Raw Dog Screaming Press*, October 2010.

Retrospective Writing Contest Winner.

Giles, Kendall, "A Healing Place," Short Story, *The Dead Mule School of Southern Literature Journal*, April 2010.

Giles, Kendall, "Understanding Ancient Martial Arts Texts: Pooh and Hermeneutics," Essay, *InYo: The Journal of Alternative Perspectives on the Martial Arts and Sciences*, December 2000.

Recent Presentations

Invited Talk, "Flipping the Cybersecurity Script: A Transformative View of Security and Engineering", Cybersecurity Awareness Week, Docker Inc., 19 October 2023.

"VT-MIT Cybersecurity Information Session with Faculty Members: Panel Discussion Between Dr. Wade Baker and Dr. Kendall Giles," Virginia Tech, Webinar, 29 October 2020.

"Cybersecurity Education Opportunities Beyond the Baccalaureate," IEEE Computer Society Distinguished Visitors Program and Student and Young Professionals Virtual Conference on Cybersecurity, IEEE, 16 October 2020.

"What Is AI?," Facts and Snacks, Virginia Tech Graduate School, Northern Virginia Center, Falls Church, Virginia, November 2019.

"Understanding Artificial Intelligence," Facts and Snacks, Virginia Tech Roanoke Center, Roanoke Higher Education Center, Roanoke, Virginia, June 2019.

"Social Media for Academic Success," STS 5424: Academic Publishing in Practice and Theory, Virginia Tech, Blacksburg, Virginia, April 2018.

"Publishing: Inside a Literary Agency," University of Southern Maine, Freeport, Maine, January 2013.

"A Brief Look at Information Technology," Copenhagen Business School, Copenhagen, Denmark, November 2012.

Service

Search Committee Member for One Collegiate Faculty, any rank, in the area of ICT (MIT Program funded, stationed in Arlington), 2021-2022.

Search Committee Member for Two Collegiate Faculty Open Rank Positions in NCR, Virginia Tech, 2020–2021. Dr. Ravi Raghunathan hired. Dr. Nektaria Tryfona hired.

Department of Electrical and Computer Engineering Coordinator for the Master of Information Technology Program, Virginia Tech, 2016+.

Search Committee Member for a Collegiate Faculty Position for the MEng program in NCR, Virginia Tech, 2019-2020. Dr. Mary Lanzerotti hired.

Search committee member for the Director of the Master of Information Technology Program in the greater Washington, D.C. metro area, Virginia Tech, 2019–2020. Gina Moses hired.

Peer Academic Program Reviewer of the Master of Information Technology Program, Virginia Tech, 2019.

Virginia Tech Commencement Usher: 2017, 2018, 2019.

C-Tech^2 Summer Program for Rising Junior and Senior High School Girls, participated in the lunch Question Session for students, Virginia Tech, 2018.

Served as knowledge domain representative for Mandatory Knowledge Unit 8 (Security Fundamental Principles) and Optional Knowledge Unit 15 (User Experience/Human Computer Interaction) for Virginia Tech's NSA Center of Academic Excellence in Cyber Operations (CAE-CO) application, Virginia Tech, 2017.