

Margie Ruffin, PhD

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EDUCATION

University of Illinois at Urbana-Champaign (UI)

Aug 2020 – May 2025

Doctoral of Philosophy in Computer Science

Advisors: Gang Wang, PhD & Kirill Levchenko, PhD

Strategic Technology Management Certification

May 2024

Spelman College, Atlanta GA

Aug 2016 – May 2020

Bachelor of Science in Computer Science

SKILLS

Research Methods	Qualitative and Quantitative (surveys, usability testing, interviews, A/B testing, cognitive walkthrough) Experimental Design, Interview Design, Data Analysis
Design Tools	Qualtrics, MTurk, Prolific, Survey Monkey, Illustrator, Photoshop, Version Control, Excel, PPT, G. Suite
Programming	Python (NumPy, Pandas, Scikit-learn, Flask, Selenium), R, SQL (MySQL, NoSQL), Frontend (HTML/CSS, JavaScript), Markdown
Communication	Microsoft Teams, Zoom, Slack, Box
Data Analysis	Supervised Learning: Regression models, chi-square, ANOVA, t-test, Summary Statistics

EXPERIENCE

Atlanta University Center Data Science Initiative, Atlanta, GA

Nov 2025 – Present

Faculty Fellow

- Contributed to the **development and implementation of data science specific courses** across HBCUs
- **Produced research and aided in grant writing** to help further of the Atlanta University Center data science initiative
- Continuously **engaged with data science HBCU faculty across the country**, consulted on ongoing projects, and assisted in the developing of strategies to engage the tech and data science industries

Spelman College, Atlanta, GA

Aug 2025 – Present

Assistant Professor, Tenure-Track

- Taught undergraduate courses in Computer Science and Data Science with an **average enrollment of 46 students** per semester
- **Developed and implemented original coursework** for the college to support new Data Science for HBCUs initiative
- Conducted innovative research in AI content moderation resulting in **1 peer-reviewed publication submission**

Siebel School of Computing and Data Science, UI, Urbana, IL

Aug 2020 – May 2025

Research Team Lead

- Led and contributed to **large-scale research projects**, analyzing data from over 1,800 participants through surveys, usability tests, and interviews, identifying patterns and unmet needs to inform

strategic product design and policy improvements

- Developed and deployed **Python-based tools** and user interfaces, including frameworks for image manipulation detection and AI-generated image simulation, enhancing research efficiency and accuracy
- Translated research findings into practical recommendations, resulting in measurable outcomes, such as a **64% increase in deepfake detection accuracy**, a **60% boost in two-factor authentication adoption**, and a **20% reduction in susceptibility to online disinformation**
- Collaborated cross-functionally with engineers, designers, and stakeholders to align product designs with research insights, improving user experiences and contributing to published research in venues such as ICWSM, GROUP, and CHI

International Business Machines (IBM), Yorktown Heights, NY

May 2023 – Aug 2023

Graduate Student Research Intern

- Engineered a first-of-its-kind Python-based tool to **minimize by over 75% the false positives** generated by a security platform used for securing trust in cloud environments, released code to open-source community
- Collaborated cross-functionally with 2 engineering teams to align technical solutions with user-centered security needs, while authoring comprehensive blog posts and source documentation that **serves as primary resources** for new **open-source** community members

Lawrence Livermore National Lab, Livermore, CA

Jun 2020 – Aug 2021

Graduate Student Research Intern

- Co-led cybersecurity research focused on safeguarding the nation's power grid, utilizing classification machine learning techniques to detect and categorize faults in Industrial Control Systems (ICS)
- Cleaned and analyzed extensive ICS datasets, **leading to a 10% enhancement of the reliability** of critical infrastructure protections, while balancing technical and user-centered needs

Georgia Tech Research Institute, Atlanta, GA

Oct 2019 – May 2020

Student Research Intern

- Collaborated closely with GTRI researchers on designated projects, contributing to the development of a tool designed to analyze and assess known **vulnerabilities within HTTP/2**
- Committed to ongoing professional development by actively participating in training sessions, continuing education programs, and shadowing experienced colleagues, further enhancing both technical and interpersonal skills

Independent Contractor, Remote

Feb 2018 – Feb 2024

Website Developer & Maintainer

- Designed, developed, and **maintained responsive websites and web applications**, ensuring a seamless user experience across multiple devices and browsers, for diverse clients and industries
- Implemented content updates, including text, images, and multimedia elements, to keep the website's information current and relevant to visitors, for **over 100 websites**

PUBLICATIONS

- [ICWSM 2026] **Margie Ruffin**, Tzu-Bin Yan, Mutmaina Adebayo, Gang Wang, Kirill Levchenko. 2026. Pay to Win: Copyright Infringement and Academic Integrity Violation in Document Sharing Ecosystems. In 2026 International AAAI Conference on Web and Social Media (ICWSM). <https://doi.org/10.1609/icwsm.v20i1.42732>

- [ConPro 2026] **Margie Ruffin**, Khushi Patel, Samika Karumuri, Gang Wang. 2026. Improving Detection and Understanding the Effects of AI-Generated Videos. In 10th Workshop on Technology and Consumer Protection (ConPro '26). <https://conpro26.ieee-security.org/papers/ruffin-conpro26.pdf>
- [DSN 2025] **Margie Ruffin**, Chenkai Wang, Gheorghe Almasi, Abdulhamid Adebayo, Hubertus Franke, Gang Wang. 2025. Towards Runtime Integrity Attestation and Its Challenges in Practice: A Case Study of Keylime. In 55th Annual IEEE/IFIP International Conference on Dependable Systems and Networks (DSN). <https://doi.org/10.1109/DSN64029.2025.00036>
- [ICWSM 2025] Aiping Xiong, Haeseung Seo, Ester Chen, **Margie Ruffin**, Gang Wang, and Dongwon Lee. 2025. A Study of Training Strategies on Enhancing Human Detection of Deepfake Images. In 2025 International AAAI Conference on Web and Social Media (ICWSM). <https://doi.org/10.1609/icwsm.v19i1.35821>
- [ICWSM 2024] **Margie Ruffin**, Haeseung Seo, Aiping Xiong, Gang Wang. 2024. Does It Matter Who Said It? Exploring the Impact of Deepfake Profiles on User Perception Towards Disinformation. In 2024 International AAAI Conference on Web and Social Media (ICWSM). <https://doi.org/10.1609/icwsm.v18i1.31392>
- [GROUP 2023] **Margie Ruffin**, Kirill Levchenko, and Gang Wang. 2023. Explaining Why Fake Photos are Fake: Does It Work? In 2023 ACM International Conference on Supporting Group Work (GROUP). <https://doi.org/10.1145/3567558>
- [FabLearn 2023] Ashita Bawankule, David Hopping, Mike Tissenbaum, Howard Weatherspoon, and **Margie Ruffin**. 2023. Fostering Maker Identity and Collaboration: Affordances of the Connected Spaces Dashboard in Two Afterschool Makerspaces. In Proceedings of Constructionism / FabLearn. <https://par.nsf.gov/biblio/10536497>
- [WPES at CCS 2022] **Margie Ruffin**, Israel Lopez-Toldeo, Kirill Levchenko, and Gang Wang. 2022. Casing the Vault: Security Analysis of Vault Applications. In Proceedings of the 21st Workshop on Privacy in the Electronic Society (WPES '22) in conjunction with ACM Conference on Computer and Communications Security (CCS). <https://doi.org/10.1145/3559613.3563204>
- [SIGCHI 2020] Nias, Jaye, Hampton, Leliah, Sampson, Princess, **Ruffin, M.** 2020. Decolonizing Technologies for Preserving Cultural and Societal Diversity. In Proceedings of the CHI 2020 Workshop on Engaging in Race in HCI.
- [ACMSE 2020a] **Margie Ruffin**, Jaye Nias, Kayla Taylor, Gabrielle Singleton, and Amber Sylvain. 2020. Character Development to Facilitate Retention in a Storytelling Robot. In 2020 ACM Southeast Conference (ACMSE 2020). <https://doi.org/10.1145/3374135.3385315>
- [ACMSE 2020b] Jaye Nias and **Margie Ruffin**. 2020. CultureBot: A Culturally Relevant Humanoid Robotic Dialogue Agent. In 2020 ACM Southeast Conference (ACMSE 2020). <https://doi.org/10.1145/3374135.3385306>

PROFESSIONAL SERVICE

Program Committee

- [HumSec] Workshop on Human-Targeted Cyber Threats and Defenses 2026

Research Track Program Committee

- [WWW] The Web Conference 2025

Poster Session Program Committee

- [SOUPS] Symposium on Usable Privacy and Security 2022, 2023

CONFERENCE TALKS

- Pay to Win: Copyright Infringement and Academic Integrity Violation in Document Sharing Ecosystems. *The 20th International AAAI Conference on Web and Social Media*. Los Angeles, CA, USA. May 2026.
- Improving Detection and Understanding the Effects of AI-Generated Videos. The 10th Workshop on Technology and Consumer Protection. San Francisco, CA, USA. May 2026
- Towards Runtime Integrity Attestation and Its Challenges in Practice: A Case Study of Keylime. *The 55th Annual IEEE/IFIP International Conference on Dependable Systems and Networks*. Naples, Italy. June 2025.
- “Does it Matter Who Said It?” Exploring the Impact of Deep-fake Enabled Profiles on User Perception Towards Disinformation. *The 18th International AAAI Conference on Web and Social Media*. Buffalo, NY, USA. June 2024.
- Explaining Why Fake Photos are Fake: Does it Work? *The ACM international conference on Supporting Group Work*. Hilton Head Island, SC, USA, January 2023.
- Casing The Vault: Security Analysis of Vault Applications. *The 21st Workshop on Privacy in the Electronic Society, Co-Located with CCS*. Los Angeles, CA, USA. November 2022.

INVITED TALKS

Research Talks

- Combating Disinformation: The Impact of Manipulated Images and Fake Personas. *University of Washington: Security Lab*. Seattle, Washington, USA. April 24, 2024
- Operationalizing Remote Attestation in Data Centers and Edge Deployments. *9th Annual Illinois Sloan UCEM Conference*. Champaign, IL, USA. April 19, 2024.
- Does it Matter Who Said It? Exploring the Impact of Deepfake Profiles on User Perception Towards Disinformation. *8th Annual Illinois Sloan UCEM Conference*. Champaign, IL, USA. April 15, 2023.
- Casing the Vault: Security analysis of Vault Applications, *University of Illinois: Engineering Library Research Conversations*. Virtual. September 8, 2022.

Lectures

- Virtual AI Lab: Practical Uses for AI, *Morehouse College*. Virtual. February 19, 2024.

Panels

- Decolonizing Tech: Interrogating the Impacts of Generative AI on BIPOC Communities. *CMD-IT/ACM Richard Tapia Conference*. San Diego, CA, USA. September 19, 2024.
- Real Talk: A Guide to Grad STEM Programs. *Society of Hispanic Professional Engineers (SHPE) Illinois*. Champaign, IL, USA. April 15, 2022.
- Navigating Your Advisor-Advisee Relationship. *CMD-IT/ACM Richard Tapia Conference*. Washington D.C. September 2, 2022.

Lighting Talks

- Could it be Fake News: Combating Misinformation in the Media. *Illinois Sloan UCEM Showcase*. Virtual. March 10, 2021.

POSTERS

Conference Posters

- Yeeun Jo*, **Margie Ruffin***, Mahnoor Jameel*, and Camille Cobb. I Have Nothing to Protect”: Understanding the Factors of Adoption of 2FA in Social Media. The *44th IEEE Symposium on Security and Privacy (Oakland 2023 Posters)*. *Equal contribution.

Workshop Posters

- **Margie Ruffin**, Gang Wang, Kirill Levchenko. Explaining Why Fake Photos are Fake: Does It Work? *Computing Research Association (CRA) Grad Cohort for Women Workshop*. April 2022.

SERVICE

The SpelBots Team, Faculty Advisor

Aug 2026 – Present

- Serve as the point-person for all internal and external interaction with the students on the team including community service, special guest visits, Hackathons, and competitions
- Manage the lab inventory, professional development/research opportunities, and student experience during their time as general members (avg. 17) and as club leadership (6 e-board)

AnitaB.org, Board of Trustees

Dec 2024 – Present

- Serve as a trusted member of the board of trustees for the international non-profit organization AnitaB.org. Lend support through monthly, quarterly, and annual meetings, strategic planning, and fundraising efforts
- Participate in quarterly meetings for the Audit committee and Strategic planning committee to support the internal function of the organization and external mission for its audience

Department of Education, UI, STEM Engagement Instructor

Jan 2023 – Jul 2024

- Developed weekly lesson plans for middle and high school girls; taught introductory physical computing concepts, including LEDs, sensors, and motors with focus on self-expression through technology
- Guided students through semester-long project focused on personal identity culminating in final presentation aligning personal growth with STEM education

Grainger College of Engineering, UI, Diversity Ambassador

Aug 2021 – May 2024

- Coordinated monthly graduate student engagement initiatives, emphasized diversity, equity, and inclusion (DEI) in STEM
- Created signature event Do-nut Stress Tuesday/Thursday to promote active breaks and communication between graduate students
- Mentored seven graduate students, championed DEI efforts in recruitment and retention of underrepresented groups

TEACHING

- The Art of Data Collection: Web Scraping and Data Analysis Spring 2026
- Freshman Seminar II Spring 2026
- Foundations of Data Science Fall 2025, 2026
- Introduction to Computing: Python Fall 2025, 2026
- Freshman Seminar I Fall 2025, 2026
- Teaching Assistant: CS 598. *Endpoint Threat Detection and Investigation*. UI Fall 2024

HONORS & AWARDS

- NSF Graduate Research Fellowship Program (GRFP) 2022 – 2025
- *Awarded \$138,000*
- Alfred P. Sloan Scholar 2020 – 2025
- *Awarded \$40,000*
- Grainger College of Engineering SURGE Fellow 2020 – 2025
- *Awarded \$20,000*
- UI Graduate College Fellowship 2020 – 2025
- Magna Cum Laude, Spelman College 2020
- Phi Beta Kappa, Spelman College 2020
- Spelman College Dean's List 2017 – 2020

MEDIA COVERAGE

- Several CS Students Earn Fellowships that Recognize Research Efforts Jul 2022
<https://siebelschool.illinois.edu/news/several-cs-students-earn-fellowships-that-recognize-research-efforts>
- Siebel School Stories: Margie Ruffin finds success in the unknown Jun 2025
<https://siebelschool.illinois.edu/news/Siebel-School-Stories-Ruffin>