

# Margie Ruffin

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## SUMMARY

- Dynamic researcher with a PhD in Computer Science who has extensive experience in **user research**, **project/data management**, and **analysis** in the security and privacy field.
- **Led 3 research teams**, and worked cross-functionally with 10+ collaborators, resulting in **4 research publications**
- Knowledgeable in technical governance, project and **budget planning**, ethical HCI development, and data management
- Experienced in collaborating with **industry**, **government**, and **academia** to address technology integration risks, shape responsible development practices, and foster multistakeholder consensus

## 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

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

## EXPERIENCE

**Siebel School of Computing and Data Science, UI** 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 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), 23 pages. <https://doi.org/10.1145/3567558>
- [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), November 7, 2022, Los Angeles, CA, USA. ACM, New York, NY, USA, 6 pages. <https://doi.org/10.1145/3559613.3563204>

- [SIGCHI 2020] Nias, J., Hampton, L., Sampson, P., **Ruffin, M.** 2020. Decolonizing Technologies for Preserving Cultural and Societal Diversity. ACM SIGCHI 2020 Race in HCI Workshop, 25 April 2020, virtual workshop.
- [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), April 2–4, 2020, Tampa, FL, USA. ACM, New York, NY, USA, 4 pages. <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), April 2–4, 2020, Tampa, FL, USA. ACM, New York, NY, USA, 4 pages. <https://doi.org/10.1145/3374135.3385306>

#### In Submission

- **Margie Ruffin**, Tzu-Bin Yan, Mutmaina Adebayo, Gang Wang, Kirill Levchenko. 2024. Pay to Win: Copyright Infringement and Academic Integrity Violation in Document Sharing Ecosystems.
- **Margie Ruffin**, Chenkai Wang, Gheorghe Almasi, Abdulhamid Adebayo, Hubertus Franke, Gang Wang. 2024. Towards Runtime Integrity Attestation and Its Challenges in Practice: A Case Study of Keylime.

### **PROFESSIONAL SERVICE**

#### Poster Session Program Committee

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

#### External Reviewer

- [EAAMO] Equity and Access in Algorithms, Mechanisms, and Optimization 2023

### **CONFERENCE TALKS**

- “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.

## COMMUNITY SERVICE

### **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

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>