



HIRAK RAY

Usable Privacy And UX Researcher

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Passionate researcher enthusiastic about supporting advancements in the perceptions of usable privacy and security among older adults, as well as universal usability and UX design concerns.

Available to start: Full-time from August 2022 onwards
Part-time June-July 2022



Publications Accepted

- Ray, H., Wolf, F., Kuber, R., & Aviv, A. J. (2021). Why Older Adults (Don't) Use Password Managers. In *30th USENIX Security Symposium (USENIX Security 21)*.
- Ray, H., Flynn Wolf, R. K., & Aviv, A. J. (2021). "Warn Them" or "Just Block Them"?: Investigating Privacy Concerns Among Older and Working Age Adults. *Proceedings on Privacy Enhancing Technologies*, 2, 27-47.
- Ray, H., Wolf, F., Kuber, R., & Aviv, A. J. (2019, May). "Woe is me" Examining Older Adults' Perceptions of Privacy. In *Extended Abstracts of the 2019 CHI Conference on Human Factors in Computing Systems* (pp. 1-6).
- Patient Healthcare System (<https://ijpbs.net/SPO2-OCT-2016.pdf>).



Education

Ph.D.: Human-Centered Computing

University of Maryland, Baltimore County - Baltimore, MD

- Professional development completed in Graduate Teaching, Research Writing and Presentation Skills.
- Three publications in peer-reviewed conferences.
- Member of the Interactive Systems Research Center (ISRC) and the Privacy and Usable Security Human-Centered Computing group (PUSH).
- Served in the Organizing Committee for FKA for 2 years.
- Completed required coursework with 4.0 GPA

Master of Science: Human-Centered Computing

University of Maryland - Baltimore County - Baltimore, MD

2018-08 - 2022-08

2018-08 - 2021-05

2016-08 - 2018-05

- Coursework in Advanced Field Research Methodologies, Advanced Quantitative Methods in IS Research, Human-Computer Interaction, Human-Centered Design, and Graphic Design for Interactive Systems.
- Graduated with 4.0 GPA.

● **Master of Science: Computer Science**

Clemson University - Clemson, SC

- Coursework in Fundamentals of Human-Centered Computing, Measurement and Evaluation of Human-Centered Computing, Research Methods of Human-Centered Computing, Advanced Network Security, Computer Graphic Images, Data Mining, Network Science, Statistical Methods, Virtual Humans and Embodied Conversational Agents, and Virtual Reality Systems.
- Committee Member of the Clemson Indian Students' Association (CISA).
- Graduated with 3.2 GPA.

2012-08 - 2016-05

● **Bachelor of Technology: Computer Science And Engineering**

Vellore Institute of Technology - Vellore

- Graduated highest of the class in the program among NRIs (non-resident Indians).
- Professional development completed in Debate skills.
- Member of the Quiz Club and Photography Club.
- Graduated with 8.3 GPA (out of 10.0).



Work History

2021-08 - 2022-05

● **Assistive Technology Specialist, Admin. Assistant**

Student Disability Services, UMBC, Baltimore, MD

- Worked alongside students to identify bottlenecks and issues with website usability.
- Conducted a usability study on the company's website.
- Remediated research papers to improve accessibility for students with specific requirements using CommonLook and Adobe Acrobat Pro.
- Arranged rapid office equipment repair and maintenance with vendors.
- Offered office-wide software support and training, troubleshooting issues and optimizing usage.
- Developed and updated spreadsheets and databases to track, analyze and report on performance data.

2018-08 - 2021-05

● **Teaching Assistant**

University Of Maryland, Baltimore County, UMBC, Baltimore County, Baltimore

- Instructed every discussion session (4 sessions) every week for IS 303 (Fundamentals of Human Computer Interaction).
- Partnered with instructor to plan and implement lessons following school's curriculum, goals, objectives and philosophies.
- Oversaw groups of up to 26 students at in laboratories.
- Used behavior modeling and specialized teaching techniques to share and reinforce social skills.
- Tutored struggling students individually and in small groups to reinforce learning concepts.

- Prepared teaching materials and set up audio-visual equipment to aid in discussion.
- Assigned grades for coursework and tests using answer key, recorded results and informed teacher of performance.
- Assisted teachers with classroom management and document coordination to maintain positive learning environment.
- Supported classroom activities, including tutoring, grading homework and reviewing exams.
- Participated in professional development opportunities and attended in-services and seminars.
- Oversaw students in classroom and common areas to monitor, enforce rules and support lead teacher.
- Took attendance, graded assignments and maintained student records to assist teachers with administrative tasks and maintain smooth daily operations.

2017-02 - 2018-02

● **Web Administrator**

CLEMSON INDIAN STUDENTS' ASSOCIATION, Clemson, South Carolina

- Manage official Website, Facebook Page and other social media, invitation lists and databases, and official emails and correspondence.
- Conceptualized, planned and executed original designs for wide range of website properties.
- Maintained websites for branches of CISA.
- Managed over 100 organization members and event ticket information.
- Designed graphics for website decoration and layout.
- Monitored social media and online sources for industry trends.

2017-06 - 2017-08

● **Machine Learning Intern**

NATIONAL BANK OF OMAN, Muscat, Oman

- Created decision trees using RStudio to analyze customer trends and predict profitable information.
- Identified target demographic of customers using machine learning algorithms.
- Created dimensional models of bank's core functionalities using Data Warehousing techniques, used to grasp 360-degree view of bank's structure and identify gaps in system.
- Completed reviews of codes, requirements and project plans.

2015-07 - 2015-08

● **Software Developer Intern**

I-EXCEED SOFTWARE SOLUTIONS PVT. LTD, Bangalore, Karnataka

- Prepared test plans and test cases based on UML Diagrams requirement documents for course registration software of Cosmopolitan College of Commerce and Technology, Brunei.
- Coordinated with project management staff on database development timelines and project scope.
- Collaborated on requirement gathering stage of life cycle.
- Met with Team Leader on weekly basis to provide detailed project report and milestone updates.

2015-07 - 2015-08

● **Teacher and System Administrator**

2013-01 - 2013-05

ASHWINI CHARITABLE TRUST, Bangalore, Karnataka

- Organized and maintained library inventory using MS Excel.
- Maintained financial records containing students' passbook information and parents' bank account details.
- Created and maintained organized database of student records and library information.
- Resolved issues with knowledgeable support and quality service.

Teaching Assistant

VELLORE INSTITUTE OF TECHNOLOGY, Vellore, Tamil Nadu

- Tutored students in Differential and Difference Equations.
- Supported student learning objectives through personalized and small group assistance.
- Assisted teachers with supervision and care of group of 4 students.
- Delivered personalized educational, behavioral and emotional support to individual students to enable positive learning outcomes.



Research Projects

Understanding Privacy Perceptions between older adults and younger adults. [Mixed Methods Study]

- Conducted picture-drawing sessions and illustration methods followed by semi-structured interviews.
- Qualitatively analyzed themes were developed into hypotheses and framed as survey questions.
- Final set of significant themes were found after quantitative analysis.

Determining why older adults don't use Password Managers. [Qualitative Study]

- Conducted semi-structured interviews with older adults replicating a previously published study which focused on a younger sample.
- Qualitatively analyzed themes were compared with the themes found in the replicated study's findings.

Observing the issues faced by older adults during forced adoption of Online Conferencing Tools during the COVID-19 pandemic. [Qualitative Study]

- Conducted semi-structured interviews with older adults using a grounded theory approach.
- Developed a chronological timeline of interactions with these tools, highlighting privacy and usability concerns.
- Provided guidelines for designers and researchers to enhance future experiences for older adults and other novice users.



Academic Projects

Completed 7 academic projects including developed software (Carpooling System, E-Gas System), simulation models (Hospital Simulation Model), hardware prototypes (Patient Healthcare System), network science analysis (Analysis of Road Networks in Pennsylvania), data mining projects (Movie

Recommender System), and virtual environments (Endowment Effect in Virtual Environments).



Service and Affiliations

- Organizing Committee for Fika Laboratory Sessions [2018-2019].
- Organizing Committee for Clemson Indian Students' Association [2017-2018].
- Attendee for iConference Doctoral Colloquium 2021.
- Attendee for HCC Student Research Colloquium 2021.
- Attendee for Symposium on Usable Privacy and Security (SOUPS) 2018.
- Reviewer for CHI 2021.
- Reviewer for INTERACT 2021.
- Secondary Reviewer for SOUPS 2019.



Skills

• Qualitative Research Methods	●●●●●	Excellent
• Data analysis	●●●●●	Excellent
• Technical Writing	●●●●●	Excellent
• Latex	●●●●●	Very Good
• RStudio	●●●●●	Very Good
• Teaching Pedagogy	●●●●●	Excellent
• MS Office	●●●●●	Excellent
• C	●●●●●	Very Good
• Questionnaire building	●●●●●	Excellent
• Statistical analysis	●●●●●	Very Good
• Critical Thinking	●●●●●	Excellent
• Experimental design	●●●●●	Excellent