Chandrika Mukherjee

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EDUCATION

Ph.D. Student in Computer Science Oct 2023 - Present

- **Purdue University, USA**
- Advisor: Professor Z. Berkay Celik
- Research Interests: Extended reality (XR) systems, with a focus on usability, reliability, and privacy.
- GPA: 3.83/4.00

M.S. in Computer Science Aug 2021 - Dec 2023

- **Purdue University, USA**
- GPA: 3.83/4.00

B.Tech in Computer Science and Engineering Aug 2015 - Jun 2019

- **NIT Durgapur, India**
- GPA: 9.16/10.00

RESEARCH AND PROFESSIONAL EXPERIENCE

Graduate Research Assistant Oct 2023 - Present
Purdue University, USA

- Conduct research on extended reality (XR) systems, focusing on the usability, reliability, and privacy of 3D user interfaces in modern head-mounted displays. Develop research prototypes and conduct user studies to evaluate how users interact with XR interfaces, identify when unintended interactions and data exposure occur, and inform safer and more reliable 3D UI designs.

Systems and Infrastructure SWE PhD Intern May 2025 - August 2025
Meta, Seattle, USA

- Developed an AI agent to automatically analyze application stack traces and track data flows between defined sources and sinks to detect unintended data propagation.

Software Engineering Intern May 2022 - August 2022
Meta, NYC, USA

- Developed internal UI tools to visualize how data flows between different software components.

Software Engineer July 2019 - August 2021
HSBC, Pune, India

- Full-stack developer for a credit monitoring tool, used by relationship managers.

Undergraduate Research Assistant Apr 2017 - May 2019
NIT Durgapur, India

- Designed an offline crisis-mapping system using crowdsourced GIS data and a four-tier hybrid ad hoc network architecture to support post-disaster communication.

Undergraduate Research Intern May 2018 - July 2018
IIT Kharagpur, India

- Designed a tool that encodes `.mp4` to `.svc`, transfers video via peer-to-peer communication, and decodes back to `.mp4` to enable adaptive bitrate streaming and reduce server load.

SKILLS

Research Methods: HCI systems research, mixed-methods user studies, semi-structured interviews, survey design, machine learning, and formal methods
Programming Languages: C++, Python, React, C#, Java, C, Javascript, HTML, CSS, PHP, GraphQL, SQL, Shell
XR Tecnologies:
SDKs: Unity, MRTK, A-Frame
Devices: Meta Quest, Microsoft HoloLens

TEACHING EXPERIENCE

Graduate Teaching Assistant

- CSCI 495 Explorations In Applied Computing, Purdue University — Fall 2025
- CS 182 Foundations Of Computer Science, Purdue University — Fall 2024
- EPICS and VIP (Service-Learning/Research Design Program for Undergraduates), Purdue University — Fall 2022, Spring 2023, Fall 2023
- ENGR 133 First Year Engineering (Introduction to Programming with Python, MATLAB, and Excel), Purdue University — Summer 2023

PUBLICATIONS

Conference Publications

C3 Seonghun Son, **Chandrika Mukherjee**, Reham Mohamed, Berk Gulmezoglu, and Z. Berkay Celik. **Side-channel Inference of User Activities in AR/VR Using GPU Profiling**. *Proceedings of the Network and Distributed System Security (NDSS) Symposium, 2026 (to appear).*

C2 **Chandrika Mukherjee**, Reham Mohamed, Arjun Arunasalam, Habiba Farrukh, and Z. Berkay Celik. **Demo: UI Based Attacks in WebXR**. *Proceedings of the ACM International Conference on Mobile Systems, Applications, and Services (MobiSys), 2025.*

C1 **Chandrika Mukherjee**, Reham Mohamed, Arjun Arunasalam, Habiba Farrukh, and Z. Berkay Celik. **Shadowed Realities: An Investigation of UI Attacks in WebXR**. *Proceedings of the USENIX Security Symposium, 2025.* ***Honorable Mention Award*** *(Acceptance Rate: 17.1%).*

Workshop Publications

W2 **Chandrika Mukherjee**, Arjun Arunasalam, Habiba Farrukh, Reham Mohamed, and Z. Berkay Celik. **Towards Secure User Interaction in WebXR**. *Human-Centered Sensing, Modeling, and Intelligent Systems (HumanSys), in Proceedings of the ACM SenSys, 2025.*

W1 Partha Sarathi Paul, **Chandrika Mukherjee**, Bishakh Chandra Ghosh, Sudipta Pandit, Sujoy Saha, and Subrata Nandi. **On designing a fast-deployable 'localized'GIS platform for using 'offline'during post-disaster situation**. *Emergency Response Technologies and Services (EmeRTeS), in Proceedings of the International Conference on Distributed Computing and Networking (ICDCN), 2019.*

AWARDS AND HONORS

- Honorable Mention Award (top 6%) at USENIX Security (2025)
- Faculty Choice Best Poster Award at Midwest Security Workshop (2025)
- USENIX Security Student Travel Grant (2025)
- SIGBED Student Travel Grant from CPS-IoT Week (2025)
- Purdue Women in Science Program (WISP) Travel Grant (2025)
- Graduation with Distinction (Bachelor of Technology) (2019)

PROFESSIONAL ACTIVITIES

External Reviewer

- IEEE Conference on Virtual Reality and 3D User Interfaces (IEEE VR), 2026
- USENIX Security Symposium, 2025

REFERENCES

Z. Berkay Celik
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