Chandrika Mukherjee

| | Portfolio - https://chandms.github.io/
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EDUCATION

PURDUE UNIVERSITY
West Lafayette, IN, USA
M.S. & Ph.D. in CS
Ph.D. (Expected August 2027)
M.S. (2021-2023, Conferred 2023)
CGPA: 3.83/4.00

NIT DURGAPUR
Durgapur, WB, India
2015-2019
B.Tech in Computer Science and Engineering
CGPA: 9.16 /10.0

SKILLS

PROGRAMMING
Programming Languages:
C++, Python, React, C#, Java, C, Javascript, HTML/CSS, PHP, GraphQL, SQL, Shell.
Frameworks/Tools:
PyTorch, Keras, Pandas, Scikit-Learn, Unity, MRTK, A-Frame, Git, Mercurial SCM , Android
Software Development:
Web app, Mobile app, Immersive standalone, and WebXR apps for VR/MR headsets, Agile Software development.

COURSEWORK

GRADUATE
- Data Communication and Computer Networks
- Algorithm Design, Analysis, and Implementation
- Database Systems
- Security Analytics
- Data Mining
- Multimedia Networking and Operating Systems
- Programming Languages
- Information Security
- Independent Study involving security and privacy of XR

SOFTWARE ENGINEERING EXPERIENCE

META | Software Engineer Intern (16th May 2022 - 5th AUG 2022)
| New York, USA

Worked in Messaging Health Signals - privacy-related infra team under Messenger Org. Developed a UI tool that detects sensitive database access in code blocks, leveraged by software team leads before code production release. Developed visual analytic tool to represent data flows within various privacy assets across Meta. Primary tech stack - React, GraphQL, PHP, Python.

HSBC | Software Engineer (8th JUL 2019 - 11th AUG 2021)
| Pune, Maharashtra, India

Worked as a full-stack Java developer in a team under Wealth and Personal Banking department. Participated in code management activities using Git during production releases. Supported the production batch for foreign client regions (HK, SG, US, and CA). Primary tech stack - Java, DB2, Spring Batch.

RESEARCH EXPERIENCE

PURSEC LAB | Purdue University, IN, USA
| Graduate Research Assistant (Jan 2024 – Present)

Group pairing for mixed reality headsets - Designed a secure group pairing protocol for mixed reality headsets (e.g., HoloLens2) by leveraging multi-modal sensors within an open-shared environment in the presence of man-in-the-middle adversary.
UI dark patterns in WebXR - Identifying new dark patterns in WebXR by manipulating its UI properties and investigating the impact of the dark patterns on users.
Future work - dynamic analysis in XR using LLM, defense against UI dark patterns in XR using ML, cache-based side-channel attacks in XR using ML.

MCNERG LAB | NIT Durgapur, WB, India
| Undergraduate Research Assistant (July 2017 - May 2019)

Designed an offline crisis map using crowdsourced GIS objects for a post-disaster situation. The system leverages a four-tier hybrid ad hoc network architecture and summarizes various situational data to aid the disaster management unit.

CNERG | IIT Kharagpur, WB, India
| Undergraduate Research Intern (May 2018 – June 2018)

Worked on peer-to-peer live video streaming based on scalable video coding to support adaptive bitrate streaming and reduce load on the server.

PUBLICATION

[1] **StareToPair: Gesture-based Group Pairing for Mixed Reality**
Reham Mohamed, **Chandrika Mukherjee**, Habiba Farrukh, Antonio Bianchi, and Z. Berkay Celik *[In Submission]*

[2] **On designing a fast-deployable 'localized' GIS platform for using 'offline' during post-disaster situation**
Partha Sarathi Paul, **Chandrika Mukherjee**, Bishakh Chandra Ghosh, Sudipta Pandit, Sujoy Saha, Subrata Nandi *[International Conference on Distributed Computing and Networking (ICDCN), 2019]*

TEACHING

GRADUATE TEACHING ASSISTANT
Foundations of Computer Science (CS 18200) — Fall 2024
ENGR 13300 - First Year Engineering — Summer 2023
EPICS and VIP, Purdue — Fall 2022, Spring 2023, Fall 2023