ABHINAYA S B

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Research Interests

My research interest lies in trust and safety in emerging technologies. I am currently exploring usable security, privacy and safety research for virtual reality.

Education

North Carolina State University (NCSU), Raleigh, USA   **Aug 2022 - Present**
PhD in Computer Science; *Advised by Dr. Anupam Das (WSPR lab)*
CGPA: 4.00/4.00
Courses: Human-Centered Security, Research Methods in Human-Centered
Computing, Computer & Network Security, Cryptography, Software Security,
Cellular & Telephone Network Security, Computer Networks, Algorithms

National Institute of Technology, Tiruchirappalli, India   **Jul 2015 - May 2019**
Bachelor of Technology (Honours) in Computer Science and Engineering
CGPA: 9.74/10.00

Publications

Peer-Reviewed Conference Publications

1. **Enabling Developers, Protecting Users: Investigating Harassment & Safety in VR**
   Abhinaya S.B., Aafaq Sabir, Anupam Das
   USENIX Security Symposium, Aug 2024.   [**preprint**]

2. Understanding Parents' Perceptions and Practices Toward Children's Security and Privacy in Virtual Reality
   Jiaxun Cao, Abhinaya S.B., Anupam Das, Pardis Emami-Naeini
   IEEE Symposium on Security and Privacy, May 2024. (Acceptance Rate: 17.8%) [**preprint**]

3. A Question Answering and Quiz Generation Chatbot for Education
   A S Sreelakshmi, Abhinaya S.B., Aishwarya Nair, S Jaya Nirmala
   Grace Hopper Celebration India (GHCI), Nov 2019.   [**paper**]

Journal Publications

1. **A Survey of Techniques for improving Security of GPUs**
   Sparsh Mittal, Abhinaya S.B., Manish Reddy, Irfan Ali
   Journal of Hardware and Systems Security, Sep 2018.   [**paper**]

Posters

1. **Virtual Adventures, Real Challenges: Analyzing Harassment Controls in VR**
   Abhinaya S.B., Aafaq Sabir, Anupam Das
   USENIX Security Symposium, Aug 2023.   [**poster**]

2. Protego Totalum! Mitigating Harassment in Virtual Reality
   <u>Abhinaya S.B.</u>, Aafaq Sabir, Anupam Das
   Graduate Student Research Symposium, NC State University, Apr 2023.   [**abstract**]

Employment & Experience

Research Experience

1. **Graduate Research Assistant, NC State University**   **May 2023 - Present**
   Usable security and privacy research in virtual reality technology.

Teaching Experience

1. **Graduate Teaching Assistant, NC State University**   **Jan 2023 - May 2023**
   CSC 433 Privacy in the Digital Age

2. **Graduate Teaching Assistant, NC State University**   **Aug 2022 - Dec 2022**
   CSC 326 Software Engineering

Industry Experience

1. **Engineer, Qualcomm India Pvt. Ltd.**   **Dec 2020 - Jun 2022**
   Designed a prototype to overcome resource availability constraints for concurrent workloads on the Neural Signal Processor (NSP); added support for testing the NSP across 2 simulators, 1 emulator, 2 Linux and 1 Windows based platforms.

2. **Associate Engineer, Qualcomm India Pvt. Ltd.**   **Jul 2019 - Nov 2020**
   Developed a suite of tests and support tools for Snapdragon's NSP that identified 5 critical HW issues; presented work at internal conferences, Qbuzz (India) and ML Summit (international) with 3K+ total attendees.

3. **Interim Engineering Intern, Qualcomm India Pvt. Ltd.**   **May 2018 - Jul 2018**
   Analyzed Google's Pixel Visual Core based image capture to derive architectural insights.

Awards & Honors

- **RSA Security Scholar**   **Nov 2023**
  Selected as a Security Scholar to attend the RSA conference in May 2024.

- **USENIX Security '23 Diversity Grant Recipient**   **Jul 2023**
  Awarded 850 USD to attend USENIX Security Symposium in Aug 2023.

- **GREPSEC Scholar**   **Jun 2023**
  Awarded 970 USD to attend the GREPSEC VI workshop in Aug 2023.

- **College of Engineering Graduate Enhancement Award**   **Apr 2023**
  Awarded 2850 USD by the College of Engineering, NC State University.

- **NC State University Graduate Fellowship**   **Feb 2022**
  Awarded 4000 USD by NC State University.

Service

- External Reviewer, ACSAC   2023

- External Reviewer, CCS   2023

- External Reviewer, IEEE S&P 2024
- External Reviewer, PETS 2024
- External Reviewer, CHI 2024
- External Reviewer, CSCW 2024
- External Reviewer, USEC 2024
- Artifact Evaluation Committee, USENIX Security 2023, 2024

Invited Talks

- **Enabling Users, Protecting Developers: Investigating Harassment and Safety in Virtual Reality**
  Presented at the 3rd annual North Carolina Cybersecurity Symposium   Feb 2024

Skills

Programming	C, C++, Python, Java, Tensorflow, HTML/CSS, Javascript, Three.js, Angular.js
Tools	Dedoose, Android Studio, MATLAB, Network Simulator, Trace32, Zotero, LaTeX
Methods	Survey Design, Interview Design, Qualitative Analysis

Leadership

- Interview Prep Committee, Women in Computer Science (WiCS), NCSU   Jul 2023 - Present
- Vice President, Public Relations, Toastmasters   Jul 2021 - Dec 2021
- Secretary, Toastmasters   Jan 2022 - Jun 2022
- Manager, Content for Pragyan, technical fest of NIT Trichy   2018-2019
- Manager, Computer Science and Engineering Association, NIT Trichy   2018-2019
- Head, Content for Festember, annual cultural extravaganza of NIT Trichy   2017-2018
- Executive Committee Member, National Service Scheme, NIT Trichy   2015-2016

Mentoring

- Abhishri Agrawal, UNC-Chapel Hill
- Tarun Puvvala, North Carolina School of Science and Mathematics
- Noah Chang, North Carolina School of Science and Mathematics