

# ABHINAYA S B

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## Research Interests

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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

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**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

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### Peer-Reviewed Conference Publications

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

- 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

- 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

Abhinaya S.B., Aafaq Sabir, Anupam Das

Graduate Student Research Symposium, NC State University, Apr 2023.

[abstract]

## Employment & Experience

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### 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

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- **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

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- 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

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

## Skills

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<b>Programming</b>	C, C++, Python, Java, Tensorflow, HTML/CSS, Javascript, Three.js, Angular.js
<b>Tools</b>	Dedoose, Android Studio, MATLAB, Network Simulator, Trace32, Zotero, L <sup>A</sup> T <sub>E</sub> X
<b>Methods</b>	Survey Design, Interview Design, Qualitative Analysis

## Leadership

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- 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

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