ARJUN ARUNASALAM

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EDUCATION

Purdue University, West Lafayette **May 2025 (Expected , Candidacy - April 2024)**

Ph.D. Student in Computer Science (GPA: 4.0/4.0)

Relevant Coursework: Human-AI Interaction, Data Mining, Information Security, Algorithm Design

University of Michigan, Ann Arbor **May 2020**

B.S.E in Computer Engineering (*summa cum laude*, 3.77/4.00)

Relevant Coursework: Data Structures & Algorithms, Computer Vision, Operating Systems

SKILLS

Programming Languages: Python, C++, Golang, MATLAB, R, Javascript

Frameworks and Tools: Docker, PyTorch, MySQL, postgres, Neo4j, HTML/CSS

Research Methods: Data Mining, Web Crawling, NLP, Quantitative Data Analytics, Survey Development, Focus Groups/Interviews, Qualitative and Thematic Data Coding

RESEARCH PROJECTS AND PROFESSIONAL EXPERIENCE

Graduate Research Assistant - Purdue University, IN **August 2020 - Present**

- Measuring Usability of Digital Mental Wellness Solutions
  - Performed *data crawling* on > 500 webpages to understand expectations for wellness tool.
  - Applied *signal processing* to synthesize time-frequency mapping for audio tracks.
  - Leveraged *natural language processing* methods to classify audio track metadata.
  - Performed *machine learning clustering* to extract 6 groups of deceptive mental wellness tracks.
- Investigated Large Language Model Accuracy in Security and Privacy Advice
  - Curated dataset of >100 security and privacy misconceptions using *web crawling*.
  - Designed 4 experiments to determine language model accuracy, subsequently conducted using NLP tools, e.g., *GPT-4*, language parapharsing models.
  - Measured question-answering accuracy of language model responses using *data annotation*.
- Analyzed User Interaction w/ Deceptive Patterns in Data Tracking Permissions Prompts
  - Designed *app prototype* permission prompts for A/B study.
  - Conducted *data analytics* for >100 corresponding study responses.
  - Applied *inferential statistics* to develop 4 insights on mobile permission prompt limitations.
- Explored Online Seller Abuse on E-Commerce Platforms
  - Programmed automated *data crawling* framework to scrape 7 online forums.
  - Ported and deployed crawling framework on cloud (*AWS*) for efficient data collection.
  - Analyzed malicious software code using *web development tools* to understand execution chain.
  - Performed *thematic data coding* to uncover 5 abusive sellers tactics and 4 consequential harms.
- Disseminated *five* research papers through top conferences.

Cloud Security Research Intern - IBM Research, NY **May 2019 - April 2020**

- Participated in research of automated security analytics of cloud microservice applications, contributing to IBM's Code Risk Analyzer project.
- Performed static analysis on Dockerfiles to populate a *Neo4j graph database*, to allow the identification of vulnerable software dependencies.
- Programmed developer *APIs* in *Golang* that interacted with *postgres database*, allowing for retrieval of software package vulnerabilities.
- Developed *back-end framework* for automated remediation of vulnerable Dockerfiles.
- Designed *UIs* using *JavaScript* and *HTML/CSS* to visualize analytic results.

MENTORSHIP AND TEACHING

Mentorship - Purdue University **2020-2023**

- Mentored 4 students in developing and submitting research projects for publication.

Teaching Assistant - Purdue University **2020-2023**

- Led lab/recitations and graded assignments for ∼30-40 students, over three semesters.
- Awarded "Graduate Teaching Award" (Oct 2023) for leadership services.

PEER-REVIEWED PUBLICATIONS

Conferences are the primary academic publishing venues for computer scientists.

Conference Publications

∗ denotes equal contribution

C5 **Arjun Arunasalam***, Habiba Farrukh*, Eliz Tekcan*, and Z. Berkay Celik
Understanding the Security and Privacy Implications of Online Toxic Content on Refugees [Paper]
Proceedings of the **USENIX** Security Symposium, 2024 (to appear, Acceptance Rate: TBD%)

C4 Reham Mohamed, **Arjun Arunasalam**, Habiba Farrukh, Jason Tong, Antonio Bianchi, and Z. Berkay Celik
ATTention Please! An Investigation of the App Tracking Transparency Permission [Paper]
Proceedings of the **USENIX** Security Symposium, 2024 (to appear, Acceptance Rate: TBD%)

C3 **Arjun Arunasalam***, Andrew Chu*, Muslum Ozgur Ozmen, Habiba Farrukh, and Z. Berkay Celik
The Dark Side of E-Commerce: Dropshipping Abuse as a Business Model [Paper]
Proceedings of the Network and Distributed System Security Symposium (**NDSS**), 2024 (Acceptance Rate: 21%)

C2 Yufan Chen*, **Arjun Arunasalam***, and Z. Berkay Celik
Can Large Language Models Provide Security & Privacy Advice? Measuring the Ability of LLMs to Refute Misconceptions [Paper]
Proceedings of the Annual Computer Security Applications Conference (**ACSAC**), 2023, (Acceptance Rate: 23.3%)

C1 Andrew Chu*, **Arjun Arunasalam***, Muslum Ozgur Ozmen, and Z. Berkay Celik
Behind the Tube: Exploitative Monetization of Content on YouTube [Paper]
Proceedings of the **USENIX** Security Symposium, 2022, (Acceptance Rate: 17%)