VISHNU ASUTOSH DASU

Google Scholar ◇ GitHub ◇ LinkedIn ◇ vdasu@psu.edu ◇ +1 (582) 203-9641 ◇ vdasu.github.io

EDUCATION

- **Pennsylvania State University** *Aug 2024 - May 2028*
  Doctor of Philosophy, Computer Science and Engineering
  - *Research Area*: Trustworthy AI and Software Security
  - *Advisor*: Prof. Gang (Gary) Tan
- **Pennsylvania State University** *Aug 2022 - May 2024*
  Master of Science, Computer Science and Engineering
  - *Thesis*: "Mitigating Unfairness in Deep Learning"
  - *Advisor*: Prof. Gang (Gary) Tan
- **Manipal Institute of Technology (MIT), Manipal** *July 2016 - July 2020*
  Bachelor of Technology, Computer Science and Engineering

PUBLICATIONS

* - Equal Contribution/Alphabetical Order

- **Attention Pruning: Automated Fairness Repair of Language Models via Surrogate Simulated Annealing [pdf]**
  (Major Revision) 48th International Conference on Software Engineering (ICSE), 2026
  Vishnu Asutosh Dasu, Md Rafi ur Rashid, Vipul Gupta, Saeid Tizpaz-Niari, Gang Tan
- **Improving Noise Efficiency in Privacy-preserving Dataset Distillation [pdf]**
  International Conference on Computer Vision (ICCV), 2025
  Runkai Zheng, **Vishnu Asutosh Dasu**, Yinong Wang, Haohan Wang, Fernando De la Torre
- **Privacy-Preserving Data Deduplication for Enhancing Federated Learning of Language Models [pdf]**
  Network and Distributed System Security (NDSS) Symposium, 2025
  Aydin Abadi*, **Vishnu Asutosh Dasu***, Sumanta Sarkar*
- **NeuFair: Neural Network Fairness Repair with Dropout [pdf]**
  33rd ACM SIGSOFT International Symposium on Software Testing and Analysis (ISSTA), 2024
  Vishnu Asutosh Dasu, Ashish Kumar, Saeid Tizpaz-Niari, Gang Tan
- **Impact of Data Duplication on Deep Neural Network-Based Image Classifiers: Robust vs. Standard Models [pdf]**
  IEEE Deep Learning Security and Privacy Workshop (DLSP), IEEE S&P, 2025
  Alireza Aghabagherloo, Aydin Abadi, Sumanta Sarkar, **Vishnu Asutosh Dasu**, Bart Preneel
- **PROV-FL: Privacy-preserving Round Optimal Verifiable Federated Learning [pdf]**
  15th ACM Workshop on Artificial Intelligence and Security (AISEC), ACM CCS, 2022
  Vishnu Asutosh Dasu, Sumanta Sarkar, Kalikinkar Mandal
- **Side Channel Attack On Stream Ciphers: A Three-Step Approach To State/Key Recovery [pdf]**
  IACR Conference on Cryptographic Hardware and Embedded Systems (CHES), 2022
  Satyam Kumar, **Vishnu Asutosh Dasu**, Anubhab Baksi, Santanu Sarkar, Dirmanto Jap, Jakub Breier, Shivam Bhasin
- **EvoquerBot: A multimedia chatbot leveraging synthetic data for cross-domain assistance [pdf]**

Alexa Prize TaskBot Challenge 2 Proceedings
Team EvoquerBOT, Penn State University

- **New Results on Machine Learning-Based Distinguishers [pdf]**
IEEE Access, 2023
Anubhab Baksi*, Jakub Breier*, **Vishnu Asutosh Dasu***, Xiaolu Hou*, Hyunji Kim*, Hwajeong Seo*

- **Three Input Exclusive-OR Gate Support For Boyar-Peralta's Algorithm [pdf]**
22nd International Conference on Cryptology in India (Indocrypt), 2021
Anubhab Baksi, **Vishnu Asutosh Dasu**, Banashri Karmakar, Anupam Chattopadhyay, Takanori Isobe

- **LIGHTER-R: Optimized Reversible Circuit Implementation For SBoxes**
32nd IEEE International System-on-Chip Conference (SOCC), 2019
Vishnu Asutosh Dasu, Anubhab Baksi, Sumanta Sarkar, Anupam Chattopadhyay

- **[Re] GANSpace: Discovering Interpretable GAN Controls**
ReScience C, 2022
Vishnu Asutosh Dasu, Midhush Manohar T.K.

PREPRINTS/UNDER SUBMISSION

- **Trust Me, I Can Handle It: Self-Generated Adversarial Scenario Extrapolation for Robust Language Models[pdf]**
(Under Review) The 40th Annual AAAI Conference on Artificial Intelligence (AAAI), 2026
Md Rafi Ur Rashid, **Vishnu Asutosh Dasu**, Ye Wang, Gang Tan, Shagufta Mehnaz

- **Gradient-Free Privacy Leakage in Federated Language Models through Selective Weight Tampering [pdf]**
(Under Review) Network and Distributed System Security (NDSS) Symposium, 2026
Md Rafi Ur Rashid, **Vishnu Asutosh Dasu**, Kang Gu, Najrin Sultana, Shagufta Mehnaz

- **iResolveX: Multi-Layered Indirect Call Resolution via Static Reasoning and Learning-Augmented Refinement**
(Under Review) USENIX Security, 2026
Monika Santra, Bokai Zhang, Mark Lim, **Vishnu Asutosh Dasu**, Dongrui Zeng, Gang Tan

- **Scalable Privacy-preserving Federated K Nearest Neighbors**
Under Submission
Aydin Abadi*, **Vishnu Asutosh Dasu***, Sumanta Sarkar*

ACADEMIC AND WORK EXPERIENCE

- **Pennsylvania State University** *Aug. 2022 - Present*
Graduate Research/Teaching Assistant *Advisors: Gang Tan, Saeid Tizpaz-Niari, Shagufta Mehnaz*
  - *Projects:* Data extraction attacks on federated LLMs, Trustworthy Code Generation LLMs, Fairness and Robustness of LLMs, Software Security

- **Tata Consultancy Services (TCS) Research** *Sept 2020 - June 2022*
Researcher, Cybersecurity and Privacy *Advisors: Sumanta Sarkar*
  - *Projects:* Privacy-preserving Federated Learning, Secure Multiparty Computation, Insider Threat Detection

- **Citrix R&D** *Jan 2020 - June 2020*
Software Engineer Intern, Citrix Analytics for Security (CAS)
  - Full-stack Web Developer (Spring Boot, React.js)

- **Nanyang Technological University (NTU)** *Dec 2019*
  Research Intern *Advisors: Anupam Chattopadhyay*
  - *Projects:* Optimizing hardware implementations of block ciphers
- **TCS Research** *May 2019 - July 2019*
  Research Intern, Cybersecurity and Privacy *Advisors: Chalamala Srinivasa Rao*
  - *Projects:* Adversarial attacks and defenses on Convolution Neural Networks (CNNs)
- **Tiny Banyan Technologies** *Feb 2019 - May 2019*
  Machine Learning Intern
  - *Projects:* Real-time detection of humans and firearms from CCTV footage using deep learning
- **Indian Statistical Institute** *May 2018 - July 2018*
  Summer Scholar *Advisors: Dipti Prasad Mukherjee*
  - *Project:* 3-D coordinate estimation of humans from 2-D live video feed

SKILLS

- **Beginner:** Go, Swift, iOS/Android Development, ROS, Robotics
- **Intermediate:** Rust, C++, Java, JavaScript, HTML, SQL, Web Development, Git, Linux, LLVM
- **Advanced:** Machine Learning, Deep Learning, Large Language Models, Natural Language Processing, Trustworthy AI, Python, C, LaTeX, Security, Privacy, Computer Vision, Cryptography

SERVICE

- **Reviewer:** AAAI 2026, IEEE TIFS (2025), IEEE Access (2025)
- **Artifact Evaluation Committee:** ACM CCS 2025
- **External Reviewer:** NDSS 2025, OOPSLA 2025, IEEE S&P 2025
- **Organizer:** Penn State Security Reading Group (2024 - Present)
- **Judge:** Penn State Undergraduate Exhibition 2025

AWARDS AND ACHIEVEMENTS

- **Internet Society Fellowship**: Received the Internet Society Fellowship to attend NDSS 2025.
- **TCS Citation Award** *(3× recipient)*: Received the award for outstanding contribution to TCS.
- **Scholarship**: Received a scholarship to attend the *Winter School on Responsible AI* in Israel.
- **Best Project Award**: Received the Best Project Award during the *Fifth Summer School on Computer Vision, Graphics and Image Processing*, Indian Statistical Institute (ISI) Kolkata.
- **IGVC**: Placed 2^{nd} in the Interoperability Profiles Challenge and 9^{th} overall at *Intelligent Ground Vehicle Competition (IGVC)* 2018. Second-best among all teams from India.
- **DAGsHub Award:** Received a $500 award from *DAGsHub* for completing the *ML Reproducibility Challenge Spring 2021.*

PROFESSIONAL MEMBERSHIPS

- Student Member of the ACM
- Student Member of IEEE