

VISHNU ASUTOSH DASU

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EDUCATION

- **The Pennsylvania State University** May 2024 - Present
Doctor of Philosophy, Computer Science and Engineering
– *Advisor*: Prof. Gary Tan
– *Research Area*: Trustworthy Machine Learning and Software Security
CGPA: 3.92/4
- **The Pennsylvania State University** Aug 2022 - May 2024
Master of Science, Computer Science and Engineering
– *Thesis*: “Mitigating Unfairness in Deep Learning”
– *Advisor*: Prof. Gary Tan
CGPA: 3.92/4
- **Manipal Institute of Technology (MIT), Manipal** July 2016 - July 2020
Bachelor of Technology, Computer Science and Engineering
– *Minor in Big Data*
CGPA: 8.71/10

SELECTED PUBLICATIONS

Citations: 116, h-index: 6

* - Equal Contribution/Alphabetical Order

- **Privacy-Preserving Data Deduplication for Enhancing Federated Learning of Language Models**
Conditionally Accepted at Network and Distributed System Security (NDSS) Symposium, 2025
Aydin Abadi*, Vishnu Asutosh Dasu*, Sumanta Sarkar*
- **NeuFair: Neural Network Fairness Repair with Dropout**
33rd ACM SIGSOFT International Symposium on Software Testing and Analysis (ISSTA)
Vishnu Asutosh Dasu, Ashish Kumar, Saeid Tizpaz-Niari, Gang Tan
- **FLTrojan: Privacy Leakage Attacks against Federated Language Models Through Selective Weight Tampering**
Pre-print on arXiv and under review at USENIX Security, 2025
Md Rafi ur Rashid, Vishnu Asutosh Dasu, Kang Gu, Najrin Sultana, Shagufta Mehnaz
- **PROV-FL: Privacy-preserving Round Optimal Verifiable Federated Learning**
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**
IACR Transactions on Cryptographic Hardware and Embedded Systems (TCHES), 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**
Alexa Prize TaskBot Challenge 2 Proceedings
Team EvoquerBOT, Penn State University
- **New Results on Machine Learning-Based Distinguishers**
IEEE Access, 2023
Anubhab Baksi*, Jakub Breier*, Vishnu Asutosh Dasu*, Xiaolu Hou*, Hyunji Kim*, Hwaajeong Seo*
- **Three Input Exclusive-OR Gate Support For Boyar-Peralta’s Algorithm**
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

ACADEMIC AND WORK EXPERIENCE

- **The Pennsylvania State University** Aug. 2022 - Present
Graduate Research/Teaching Assistant University Park, PA, USA
 - *Supervisors:* Prof. Gary Tan, Prof. Saeid Tizpaz-Niari, & Prof. Shagufta Mehnaz
 - *Projects:* Private data extraction attacks on federated LLMs, Trustworthy Code Generation LLMs, Fairness of LLMs and Machine Learning
- **Tata Consultancy Services (TCS) Research** Sept 2020 - June 2022
Researcher, Cybersecurity and Privacy Bangalore, India
 - *Supervisors:* Prof. Sumanta Sarkar & Manish Shukla
 - *Project:* Privacy-preserving federated learning, Insider threat detection from network logs
- **Citrix R&D** Jan 2020 - June 2020
Software Engineer Intern, Citrix Analytics for Security (CAS) Bangalore, India
 - Full-stack developer (Citrix Analytics for Security)
- **Nanyang Technological University (NTU)** Dec 2019
Research Intern Singapore
 - *Supervisor:* Prof. Anupam Chattopadhyay
 - *Project:* Optimized hardware implementations of block ciphers
- **TCS Research** May 2019 - July 2019
Research Intern, Cybersecurity and Privacy Hyderabad, India
 - *Supervisor:* Dr. Chalamala Srinivasa Rao
 - *Project:* Adversarial attacks and defenses on Convolution Neural Networks (CNNs)
- **Tiny Banyan Technologies** Feb 2019 - May 2019
Machine Learning Intern Remote
 - *Project:* Real-time detection of humans and firearms from CCTV footage using deep learning
- **Indian Statistical Institute** May 2018 - July 2018
Summer Scholar Kolkata, India
 - *Supervisor:* Prof. Dipti Prasad Mukherjee
 - *Project:* 3-D coordinate estimation of humans from 2-D live video feed
- **Project Manas (AI Robotics)** Feb 2018 - Feb 2019
 - *Projects:* Clustering and tracking LIDAR point clouds, Sensor fusion using Kalman Filters

SKILLS

- **Beginner:** Go, Rust, Swift, iOS Development, Android Development
- **Intermediate:** C++, Java, Javascript, HTML, Cryptography, SQL, Web Development, Computer Vision, Image Processing, Natural Language Processing, Robotics, ROS, Git, Linux
- **Advanced:** Machine Learning, Deep Learning, Trustworthy ML, Python, C, L^AT_EX, Security, Privacy

SERVICE

- **External Reviewer**, Network and Distributed System Security (NDSS) Symposium 2025
- **Reviewer**, ReScience Present

AWARDS AND ACHIEVEMENTS

- **TCS Citation Award** ($3 \times$ recipient): Received the TCS Citation Award and appreciation from the Chief Technical Officer and Head of TCS Research thrice for outstanding contribution to the organization.
- **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 2nd in the Interoperability Profiles Challenge and 9th overall at *Intelligent Ground Vehicle Competition (IGVC)* 2018. Second-best among all teams from India.
- **ACM ICPC Regionals:** Represented MIT Manipal at the 2017 *ACM ICPC Asia Regional Contest*.
- **DAGsHub Award:** Received a \$500 award from *DAGsHub* for completing the *ML Reproducibility Challenge Spring 2021*.