

SASWAT DAS

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Responsible AI, (Differential) Privacy, Fairness, Security

Education

University of Virginia (UVA)

Ph.D. in Computer Science

Aug. 2023 – Present

Charlottesville, Virginia

National Institute of Science Education and Research (NISER)

Integrated M.Sc. (BS + MS) in Mathematics (Minor in Computer Science)

Jul. 2018 – May 2023

Bhubaneswar, India

Experience

Department of Computer Science, University of Virginia

Graduate Research Assistant (PhD)

June 2022 – July 2023

Charlottesville, VA

- Mentor: Dr. Ferdinando Fioretto
- Focus Areas: Differential Privacy, Fairness, Responsible AI

EECS, Syracuse University

Visiting Research Scholar/Collaborator

June 2022 – July 2023

Syracuse, NY (Online after Aug 2022)

- Mentor: Dr. Ferdinando Fioretto (now at UVA)
- Focus Areas: Differential Privacy, Fairness, Responsible AI

School of Computer Sciences, NISER

MS Research Scholar

Aug. 2021 – May 2023

Bhubaneswar, India

- Mentor: Dr. Subhankar Mishra
- Focus Areas: Differential Privacy, Security, Responsible AI

School of Computer Sciences, NISER

BS Winter Research Intern

Dec. 2019 – Jan. 2020

Bhubaneswar, India

- Mentor: Dr. Rishiraj Bhattacharyya (Now at the University of Birmingham)
- Focus Areas: Blockchain, P2P Networks, Cryptography, Zero-Knowledge Proofs

School of Computer Sciences, NISER

BS Summer Research Intern

May 2019 – July 2019

Bhubaneswar, India

- Mentor: Dr. Rishiraj Bhattacharyya (Now at the University of Birmingham)
- Focus Areas: Blockchain, P2P Networks, Cryptography

Publications

Conference Publications

Disparate Impact on Group Accuracy of Linearization for Private Inference

2024

Saswat Das, Marco Romanelli, Ferdinando Fioretto

Accepted at **ICML-24**; arXiv:2402.03629

Finding ϵ and δ of Traditional Disclosure Control Systems

2024

Saswat Das, Keyu Zhu, Pascal van Hentenryck, Christine Task, Ferdinando Fioretto

Accepted at **AAAI-24**

Workshop Publications

Examining Deidentified Data Quality using NIST Datasets and Tools

2023

Saswat Das, Razane Tajeddine, Ferdinando Fioretto

Accepted at *NIST CRC 2023*

Fair Context-Aware Privacy Threat Modelling

2023

Saswat Das, Rakshit Naidu

Accepted at *WPTM at USENIX SOUPS 2022*

Book Chapters

Advances in Differential Privacy and Differentially Private Machine Learning: A Survey 2023

Saswat Das, Subhankar Mishra

Information Technology Security (Springer Nature)

Preprints

Low-rank finetuning for LLMs: A fairness perspective 2024

Saswat Das, Marco Romanelli, Cuong Tran, Zarreen Reza, Bhavya Kailkhura, Ferdinando Fioretto

ArXiv:2405.18572

Fairness Issues and Mitigations in (Differentially Private) Socio-demographic Data Processes 2024

Joonhyuk Ko, Juba Ziani, **Saswat Das**, Matt Williams, Ferdinando Fioretto

ArXiv:2408.08471

Selected Honours/Achievements

- **UVA Computer Science Scholarship (2023-24)**
- Selected for the **ELLIS Europe PhD Programme (2023)**
- **DISHA Fellowship, Department of Atomic Energy, Government of India (2018-2023)**: Received a scholarship for attending college which includes a monthly stipend for food and lodging and an annual contingency grant for research endeavours.
- Selected for the **Winter School on Theoretical Computer Science at IIT Delhi (2022)**
- Selected for **TIFR – Visiting Students’ Research Programme (VSRP), 2022 in Technology & Computer Science**
- **National Talent Search (NTS) Scholarship, NCERT, India (2016)**

Students Advised

- Joonhyuk Ko - BS, University of Virginia
- Eric Nguyen - BA, University of Virginia

Teaching

- CS 4710 - Artificial Intelligence (UVA, Fall 2024)

Service/Reviewing

- **Reviewer - NeurIPS 2024**
- **Program Committee Member - AAAI 2024, PPAI 2024, AAAI 2025**
- **Emergency Reviewer - AAMAS 2023**
- **External Reviewer - National Institute of Standards and Technology (NIST) (2023)**

Workshops and Summer/Winter Schools

AI-SCORE: The AI School for CS and OR Education

May-Jun 2024

Attendee; organised on the UMD College Park campus.

INFORMS/ACM SIGAI

Technion: Summer School on Computer & Cyber Security

September 2020

Attendee

Organised by Technion, Israel

USENIX SOUPS '23: Workshop on Privacy Threat Modeling

August 2022

Presenter/Attendee

Organised by MITRE at USENIX SOUPS 2023

- Presented a short paper on context-aware fair privacy threat modeling.

IIT-D: Winter School on Theoretical Computer Science

December 2022

Accepted Attendee

Organised by IIT-Delhi

- Did not attend due to academic schedule conflicts.

Volunteering/Organising

Reading Group on Responsible Generative AI, University of Virginia

Oct. 2023 - Present

Organiser

at UVA

- Organising the reading group on responsible generative AI at the University of Virginia where members of various research groups that work on responsible AI/generative AI come together to discuss recent advancements and future directions of work.

CodeInPlace, Stanford University

Apr. 2021 - May 2021

Section Leader/Teaching Assistant

Online; Organised by Stanford University

- Taught coding to a section of students from a global pool of applicants using material from the first half of Stanford University's popular course, CS106A.

School of Mathematical Sciences, NISER

Feb. 2021 - May 2021

Department Mathematics Tutor

At NISER

- Served as a mathematics tutor to freshmen in the spring of 2021 as part of an initiative by mathematics majors at the School of Mathematical Sciences, NISER.

Aveti Learning

Apr. 2020 - Sep 2022

Volunteer/Tutor/Mentor

Online

- Served as an online mathematics tutor and mentor to high school students in rural Eastern India to make quality education and college advice more accessible.

Avanti Fellows

Sep. 2018 - Aug. 2019

Section Leader/Teaching Assistant

Dhenkanal, India

- Served as a mentor and mathematics tutor to high school students at JNV Dhenkanal as part of the acclaimed Avanti Fellows programme.

Leadership / Extracurricular

Undergraduate Committee of the School

Dec. 2020 - Dec. 2022

Student Representative

School of Mathematical Sciences, NISER

- Served as one of two student representatives to the Undergraduate Committee of the School (UGCS) of Mathematical Sciences, NISER, an honour bestowed upon well-performing students by the school.
- Helped professors design and develop the academic course structure, pedagogy, and evaluation schemes of the undergraduate programme.

Inventa Magazine

July 2021 - Dec. 2021

Editor

IISERs, NISER, CeBS, and IISc (India)

- Worked on the editorial board for Inventa, an annual national science outreach magazine published jointly by the premier public research institutes of India: NISER, CeBS, IISc, and the IISERs.

Quizone (Campus Quiz Club), NISER

May. 2019 - Nov. 2021

President

NISER

- Served as the president of Quizone, the quiz club of NISER, HBNI, for two consecutive terms.
- Organised and hosted quizzes (online and offline), which involved planning and running logistics, making questions, maintaining a social media presence for the club, engaging with partners and sponsors etc.
- Helped codify club rules and regulations by drafting a club constitution.

Cultural Committee, NISER

Aug. 2019 - Nov. 2021

Editor

NISER

- Served as a member of the cultural committee of NISER, which is responsible for planning and organising cultural events in the college.

Delhi Public School Kalinga

Sep. 2016 - July 2018

Head Boy (Students' Council President)

Odisha, India

- Served as the Head Boy (2017-18) and Vice Head Boy (2016-17) of Delhi Public School Kalinga, in a role which involved representing the school on an interschool level, presiding over the students' council, organising events, and looking after the welfare and interests of the students of the school.

Skills (Not Exhaustive)

Science Specialties Differential privacy, algorithmic fairness, responsible AI, machine learning/artificial intelligence, pure mathematics

Programming/Scripting Languages: Python, R, C++, HTML/CSS, SQL, \LaTeX

Developer Tools: VS Code, SLURM, AWS Cloud, R Studio, etc.

Selected Libraries: Opacus, OpenDP/SmartNoise, PyTorch, HuggingFace Transformers, Captum, sdcMicro + other common libraries

Languages: English, Hindi, Odia, (familiarity with) French