Antonia (Tasha) Januszewicz

ajanusze@nd.edu | 508-377-2772 | LinkedIn

EDUCATION

University of Notre Dame, College of Engineering South Bend, Indiana
Notre Dame Data Security and Privacy Lab, Computer Science PhD Expected Graduation 2028

Georgetown University College of Arts & Sciences Washington, DC
Computer Science and Math Major, Chinese Minor 2019-2023
GPA: 3.95, First Honors 5 Semesters, Second Honors 1 Semester

TECHNICAL SKILLS

Python • Java • C++ • C • OpenFHE • Microsoft SEAL • SQL • Exor • Ansible • Pyspark • Linux • Rust

PROFESSIONAL RESEARCH EXPERIENCE

University of Notre Dame - *Research Assistant for Security and Data Privacy Lab* 2023 Jul - Present

- Leads the research team whose work resulted in the publication of "PPSA: Polynomial Private Stream Aggregation for Time-Series Data Analysis". As a part of that, is responsible for security proofs, implementing applications for users, and overseeing the work of others on the project
- Created and participated in presentations on current and emerging technologies in the fields of cryptography and blockchain based on recent publications in order to engage with fresh ideas and develop new avenues of research topics

MITRE - *Cyber Security Graduate Intern* 2026 June - 2026 Sept

- Assisted in developing and executing experiments using various LLMs, LLM improvement methods, and the Cryptographic Protocol Shapes Analysis (CPSA) tool in order to benchmark the efficacy of frontier LLMs in cryptographic protocol improvement
- Designed and analyzed a novel cryptographic protocol for authenticated underwater acoustic communication, accounting for the limitations of the given use case.

MITRE - *Cyber Security Graduate Intern* 2025 June - 2025 Aug

- Created a variety of materials, including technical and non-technical explanations and analysis used for presenting Private Information Retrieval (PIR) as a viable solution for current and future problems experienced by sponsors
- Implemented a full PIR and KeywordPIR scheme in order to show the viability of the Privacy Enhancing Cryptography (PEC) for ensuring private queries using indexing and keyword search

Georgetown University - *Research Assistant for CyberSmart Industry Sponsored Program* 2022 Aug-2023 Jun

- Worked on the Decentralized ID Project to research, develop, and prove the viability of an unlinkable, selective disclosure digital ID backed by the blockchain to facilitate the loan approval process
- Engineered and proved the effectiveness of cryptography protocols and algorithms to encrypt ID information and securely facilitate verification

TEACHING EXPERIENCE

University of Notre Dame - *Teaching Assistant for Algorithms and Cryptography* 2023 Aug - 2023 May

- Assisted in grading and providing solutions for problem sets, ensuring fair evaluation and timely feedback coordinating within a group of teaching assistants
- Provided one-on-one assistance in clarifying complex topics and homework assistance during office hours, fostering a deeper understanding of cryptography and algorithmic principles

Georgetown University - *Teaching Assistant for Computer Science* Aug - Dec 2020, Jan - May 2023

- Assisted 50 + students with finding errors in their code and problem solving with them to fix them for Introduction to Computer Science and Information Assurance classes
- Assisted students in understanding basic and mid-level computer science materials and concepts
- Offered technical support to students with technical difficulties concerning IDEs, coding integration, linking, SFTP, SSH, and other file transferring processes so that students could submit, download, and test their code as necessary

Georgetown University - *Teaching Assistant for Mathematics* 2022 Aug - 2022 Dec

- Assisted with timely homework grading for Ordinary Differential Equations. Developed model solutions to the problems and designs learning paths to aid the educational process
- Assisted 22 students in understanding practical and theoretical class material

Georgetown University - *Graduate Teaching Assistant for Analytics* 2021 Aug - 2021 Dec

- Developed reference solutions to 21 students' homework problems and graded their deliverables
- Checked written proofs and coding assignments written in Python

PUBLICATION

N. Koirala, S. Paik, S. Martin, H. Berens, **T. Januszewicz**, J. Takeshita, J.H. Seo, & T. Jung. (2026, February). S*elect-Then-Compute: Encrypted Label Selection and Analytics over Distributed Datasets using FHE*. In 33rd Annual Network and Distributed System Security (NDSS 2026).

R. Karl, N. Koirala, **T**. **Januszewicz**, J. Takeshita and T. Jung, 2025. *Cryptonite: A Framework for Flexible Time-Series Secure Aggregation with Non-interactive Fault Recovery*. SN Computer Science, 6(3), p.261.

A. Januszewicz, D. Medrano Gutiérrez, N. Koirala, J. Zhao, J. Takeshita, J. Lee, T. Jung. *PPSA: Polynomial Private Stream Aggregation for Time-Series Data Analysis*. 20th EAI International Conference on Security and Privacy in Communication Networks (Securecomm 2024).

J. Zhao, **A. Januszewicz**, & T. Jung. Position: Privacy Is a Claim, Not a Property of Synthetic Data. In *Forty-third International Conference on Machine Learning Position Paper Track*.

UNDER REVIEW

A. Januszewicz, J. Zhao, M. Jiang, & T. Jung (2026). *RAGtime-PIANO: Efficient Secure Remote RAG*.

M. Brody, **A. Januszewicz**, J. Zhao, N. Koirala, T. Jung (2026). *SCALE-FL: Scalable Cryptography-based Aggregation with Lightweight Enclaves for Federated Learning*.

ADDITIONAL QUALIFICATIONS

Collins Aerospace - *Tools Team Software Engineering Co-Op* 2021 June - 2023 May
Healthedge Inc. - *Software Quality Assurance Intern* 2020 May - 2020 Aug
Fablevision Studios, Boston MA - *Software Engineering Internship* 2018 July - 2018 Aug
Martinos Center at Mass General Hospital, Boston MA - *Web Development Intern* 2017 June - 2017 Aug

HONORS AND AWARDS

Schmitt Fellowship *(University of Notre Dame)*
Academic Excellence in Computer Science (*Georgetown University)*

PROFESSIONAL AFFILIATIONS
Pi Mu Epsilon (*Mathematical Society*)
ACM (*Association for Computing Machinery*)
WiCys (*Women in Cybersecurity*)

LEADERSHIP AND SCHOOL ACTIVITIES
Society of Schmitt Fellows of Notre Dame President, 2025 - 2026
Computer Science & Engineering Graduate Student Board, 2025 - Present
Folk Choir, 2025 - 2026

OTHER SKILLS
Languages: English (Native), Polish (Native), Chinese (Intermediate), Spanish (Reading Proficiency)