



Sima Jafarikhah

Sima Jafarikhah is an Assistant Professor of Computer Science at the University of North Carolina Wilmington. Drawing on a strong background in both mathematics and computer science, she brings an interdisciplinary perspective to addressing challenges in cybersecurity. Her research interests span areas such as cryptography, privacy, security, and digital currencies, with a focus on developing solutions that safeguard information in today's interconnected world. Equally committed to teaching, Sima strives to inspire students by connecting theoretical foundations with practical applications that tackle real-world problems.

Academic Work Experience

- Assistant professor, Department of Computer Science, University of North Carolina Wilmington (UNCW), Aug. 2021-Current.
 - Courses: Discrete Mathematics, Introduction to Cryptography, Data Security and Cryptography, Fundamentals of Cybersecurity.
- Adjunct Professor, Department of Computer Science, NYU Tandon School of Engineering, Cyber Fellow Program, New York, USA, Sept. 2021 - Dec. 2021.
 - Course: Applied Cryptography.
- Graduate Research Assistant, Department of Computer Science, City University of New York, USA, 2015-May 2021.
- Adjunct Professor, Department of Computer Science, The City College of New York, USA, Sept. 2020 - June 2021.
 - Course: Discrete Mathematics.
- Visiting Researcher, Department of Computer Science, UC Berkeley, California, USA, June 2017-Aug 2017
- Adjunct Professor, Department of Computer Science, John Jay College of Criminal Justice, New York, USA, Sept. 2016 - Dec. 2017.
 - Courses: Introduction to Cryptography, Applied Cryptography.
- Lecturer, Johns Hopkins Center for Talented Youth, Baltimore, USA, Summer 2016.
 - Course: Introduction to Cryptography.
- Adjunct Professor, Department of Mathematics and Computer Science, Semnan University, Iran, Sept. 2009 - May 2011.
 - Courses: Introduction to Mathematical Logic, Computability Theory, Automata Theory and Languages.
- Visiting Researcher, Institute for Research in Fundamental Science (IPM), Tehran, Iran, 2011-2013.

Education

- **Ph.D., Computer Science**, Graduate Center, City University of New York, New York, USA. **Dissertation Title:** Efficient Protocols for Multi-Party Computation, May 2021.
- **Ph.D. in Mathematics**, Tarbiat Modares University, Tehran, Iran. **Dissertation Title:** Riesz representation theorem in computable analysis, July 2013.
- **Masters' degree in Mathematics**, Mathematical Logic, Tarbiat Modares University, Tehran,

Iran, 2008.

- **Teaching Competency Certificate**, Tarbiat Modares University, Tehran, Iran, 2008.
- **Bachelors' degree in Mathematics**, Isfahan University of Technology, Isfahan, Iran, 2005.

Patents

- 2025-008 - Jafarikhah - Zero Knowledge Biometric Authentication, Under Review.
- 2025-009 - Jafarikhah - Server-Based Biometric Authentication, Under Review.

Publications

- Peer-reviewed Papers:
 - H. Siadati, H. Jafarian, S. Jafarikhah, **"Send to which account?" Evaluation of an LLM-based Scambaiting System**, The 20th Symposium on Electronic Crime Research (eCrime 2025), Accepted.
 - H. Alamleh, C. Ulrich, S. Jafarikhah, **Secure Ad Hoc Time Synchronization: Attack Coverage, Cost Modeling, and Practical Tuning**, Wireless Networks: The Journal of Mobile Communication, Computation and Information, Under review.
 - C. Urich, L. Estremera, H. Alamleh, S. Jafarikhah, **Defending Every Tick: Comprehensive Attack Mitigation and Feasibility Analysis for Ad Hoc Time Synchronization**, IEEE UEMCON, Under review.
 - S. Jafarikhah, Y. Saei, J. Tahmoresnezhad, H. Siadati, **Cryptographically Verifiable Fingerprint Authentication Using PEP Hash**, IEEE UEMCON 2025, Under review.
 - N. Roberts, L. Estremera, O. Richard, B. Eskra, S. Jafarikhah and H. Alamleh, **Transactions in the Wild: a Secure, Offline Architecture for Ad-Hoc Mobile Payments**, IEEE World AI IoT Congress (AlIoT), Accepted, April 10th, 2025.
 - H. Alamleh, S. Jafarikhah, B. Smadi, **Comparative Security Analysis of Apple Pay and Google Wallet: Strengths, Weaknesses, and Threats**, 35th International Conference Radioelektronika, accepted, April 2025.
 - Y. Saei, J. Tahmoresnezhad, S. Jafarikhah, H. Siadati, **Assessing Perceptual Hash Algorithms for Publicly Evaluatable Framework**, 17th IEEE International Conference on Security of Information and Networks (SINCONF), pages=1–8, 2024.
 - H. Siadati, T. Jafarikhah, E. Sahin, T. Hernandez, E. Tripp, D. Khryashchev, **DevPhish: Exploring Social Engineering in Software Supply Chain Attacks on Developers**, IEEE 15th Annual Ubiquitous Computing, Electronics and Mobile Communication Conference (UEMCON,) pages=517-523, 2024.
 - M. Mounesan, S. Siadati, T. Jafarikhah, **Exploring the Threat of Software Supply Chain Attacks on Containerized Applications**, 16th International Conference on Security of Information and Networks (SINCONF), accepted, 2023.
 - R. Gennaro, D. Hadaller, T. Jafarikhah, Z. Liu, W. Skeith, A. Timashova, **Publicly Evaluatable Perceptual Hashing**, Applied Cryptography and Network Security (ACNS), LNCS, volume 12147, Rome, Italy, 2020.
 - N. Fazio, R. Gennaro, T. Jafarikhah, W. E. Skeith, **Homomorphic Secret Sharing from Paillier Encryption**, International Conference on Provable Security (ProvSec), LNCS, volume 10592, pp. 381-399 Springer, 2017.
 - T. Jafarikhah, K. Weihrauch **Computable Jordan Decomposition of Linear Continuous Functionals on $C[0; 1]$** , Logical Methods in Computer Science 10(3), 2014.

- T. Jafarikhah, K. Weihrauch, **Computable Riesz Representation Theorem on the Dual of $C([0; 1])$ revisited**, Journal of Universal Computer Science (JUCS) 19(6), pp. 750-770 , 2013.
- T. Jafarikhah, M. Pourmahdian, K. Weihrauch, **Computable Jordan Decomposition of Linear Continuous Functionals on $C([0; 1])$** , CCA Conference, Nancy, France, 2013.
- Book Chapter:
 - H. Siadati, T. Jafarikhah, **Traditional Countermeasures to Unwanted Email** In M. Jakobsson (Editor) **Understanding Social Engineering Based Scams**, pp. 53-63, Springer, 2016.

Editorial and Reviewing Activities

- Technical Program Committees, IEEE Annual Ubiquitous Computing, Electronics and Mobile Communication Conference (IEEE UEMCON), 2025.
- Technical Program Committees, International Conference on Computing and Data Analysis (ICCDA), 2025.

Honors and Awards

- T. Jafarikhah (Principal), S. Siadati (Co-Investigator), Clark, U. Y. (Co-Investigator), External Grants/Sponsored Research, **NCPaCE (North Carolina Partnership for Cybersecurity Excellence)**, an analysis of social engineering techniques in launching software supply chain attacks, \$57,000.00, 2023-2024.
- T. Jafarikhah, **CyAD Conference: Cybersecurity Across Disciplines Travel Grant**, Moraine Valley Community College, sponsored by NSA, \$1,500.00, August 2023.
- T. Jafarikhah (Co-Principal), U. Y. Clark (Principal), G. M. Stoker (Co-Principal), L. J. Patterson (Co-Principal), S. T. White (Co-Principal), J. L. Greer (Co-Principal), J. W. Cummings (Co-Principal), D. C. Barreto (Co-Principal), **NSA GenCyber Grant**, NSA, Federal, \$148,816.31, 2023.
- T. Jafarikhah (Principal), **Friends of UNCW Award**, \$400, teaching hands-on tools, 2023.
- T. Jafarikhah (Principal), **Pilot Research Award**, Secure User-Centric Biometric Authentication, University of North Carolina Wilmington, \$3500, 2022.
- T. Jafarikhah, **CAS Professional Development Grant**, University of North Carolina Wilmington, \$1250 summer salary, June 2022.
- T. Jafarikhah, **Grace Hopper Conference (GHC22) Faculty Scholarship**, Orlando, \$650 , Sep. 2022.
- T. Jafarikhah (Principal) **Charles L. Cahill Grant**, Energy-efficient blockchain consensus algorithms: Turn-based proof of space, University of North Carolina Wilmington, \$5000, June 2022.
- **Grace Hopper Conference (GHC18) scholarship**, Texas, Sept. 2018.
- **Graduate Research Assistant scholarship**, Awarded by The City University of New York, 2017-2021.
- **Women in Theory Travel Grant (WIT 2018)**, Harvard University, Boston, June 2018.
- **The 37th Crypto conference Travel Grant**, Santa Barbara, August 2017.
- **The Financial Cryptography and Security Travel Grant**, by International Financial Cryptography Association (IFCA), Barbados, \$1000, Feb. 2016.
- **Science Fellowship**, Awarded by The City University of New York, 2015-2017.
- **Full Ph.D. scholarship**, awarded by the Ministry of Science, Research, and Technology of Iran, 2010-2012.
- Visiting Scholar, Institute for Studies in Theoretical Physics and Mathematics (IPM), 2011-2012.

- **\$1,875 Award+Accommodation NUS Graduate Summer School**, by Institute of Mathematical Science, National University of Singapore, July 2013.
- **Sabbatical scholarship at University of Darmstadt, Germany**, by Ministry of Science, Research, and Technology of Iran, €7,080, Feb. 2012.
- Travel grant to University of Hagen, Germany, by University of Hagen and IPM, May 2011.
- Ranked top 1% among about 20,000 participants, nationwide graduate entrance exam in Pure Mathematics, Iran, 2005.
- Ranked top 3% among more than 350,000 participants, nationwide entrance exam, Iran, 2000.

References

- **Dr. Rosario Gennaro**, Professor of Computer Science, City University of New York
rosario@ccny.cuny.edu
- **Dr. William Skeith**, Professor of Computer Science, City University of New York
wes@cs.ccny.cuny.edu
- **Dr Markus Jakobsson**, Chief scientist, Artema LABS,
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- **Dr Nasir Memon**, Professor Computer Science, Tandon School of Engineering, New York University, New York,
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- **Dr Toni Pence**, Professor of Computer Science. University of North Carolina Wilmington,
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