Nektarios Georgios Tsoutsos

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Research Interests

- Applied Cryptography, Privacy Outsourcing, Hardware Security, Trustworthy Computing, Computer Architecture, Cyber-physical Systems

Education

- **Ph.D.** in Computer Science, New York University, New York, NY
  Dissertation title: *"Private and Trustworthy Computation Using Additive Cryptographic Primitives"*
- **M.Sc.** in Computer Engineering, Columbia University, New York, NY
- **Diploma** (5-year) in Electrical and Computer Engineering, National Technical University of Athens, Greece

Professional Positions

- **Associate Professor**, ECE Department (primary) – CIS Department (joint), University of Delaware 09/25 –
- **Cyber Security Advisory Council Member,** State of Delaware 05/25 –
- **Co-Director**, FinTech Innovation Hub, University of Delaware 09/24 –
- **Associate Director**, Center for Cybersecurity, Assurance and Privacy (CCAP), University of Delaware 06/21 –
- **Assistant Professor**, ECE Department (primary) – CIS Department (joint), University of Delaware 09/18 – 08/25
- **Post-Doctoral Researcher**, New York University 01/18 – 08/18
- **Research Assistant**, New York University 01/13 – 01/18
- **Graduate Technical Intern**, Security Center of Excellence, Intel Corporation, Hillsboro, OR 05/14 – 11/14
- **Information Security Advisor**, Obrela Security Industries, Athens, Greece 09/10 – 12/12

Grants

- **Sole Principal Investigator:** *[NSF SaTC 2239334] CAREER: Accelerating General-Purpose Encrypted Computation on Diverse Hardware* 07/23 – 06/28
  Sponsor: National Science Foundation (NSF), **Budget: $534k**
- **Co-Principal Investigator:** *[NSF DGE 2336586] CyberCorps Scholarship for Service: Defending Cyberspace through Active Learning (PI Barner)* 01/24 – 12/28
  Sponsor: National Science Foundation (NSF), **Budget: $3.43M**
- **Co-Principal Investigator:** *[NSF SaTC 2453861] SaTC: CORE: Medium: Verifiable Secure Hardware Design via Game-Theoretic and Cryptographic Primitives (PI Patnaik)* 10/25 – 09/28
  Sponsor: National Science Foundation (NSF), **Budget: $600k**
- **Co-Principal Investigator:** *[NSF DGE 2336586 supplement] Active Learning in Microelectronics: A Community Approach (PI Barner)* 09/24 – 08/25
  Sponsor: National Science Foundation (NSF), **Budget: $337k**
- **Sole Principal Investigator (UD):** *[NSF 2234974] Collaborative Research: Research Infrastructure: CCRI: New: Data-Driven Cybersecurity Research Infrastructure for Smart Manufacturing* 04/23 – 03/26
  Sponsor: National Science Foundation (NSF), **Budget: $294k** (UD share as PI)
- **Sole Principal Investigator:** *Student Experience with Mobile ID: Investigating how digital identification technologies reduce user friction in online services* 06/22 – 12/24
  Sponsor: Arkansas Venture Center/Discover Bank, **Budget: $250k**
- **Sole Principal Investigator (UD/ECE):** *[DE-EE0008768-006] Faster-than-real-time Simulation with Demonstration for Resilient DER Integration* 11/19 – 10/23
  Sponsor: Department of Energy (DoE)/Electrical Distribution Design, **Budget: $253k** (UD/ECE share as PI)
- **Co-Principal Investigator:** *Cybersecurity Certificate Program (PI Barner)* 02/21 – 02/23
  Sponsor: JPMorgan Chase, **Budget: $450k**

- **Sole Principal Investigator:** *Zilch: A Framework for Remote Verification of Security Properties using Zero Knowledge Proofs* 06/21 – 06/23
  Sponsor: University of Delaware Research Foundation, **Budget: $38.5k**
- **Sole Principal Investigator (UD):** *[NSF 1931916] CPS: Medium: Collaborative Research: Frequency Domain Conversion of Computer Aided Design Files to Enable Encryption, Authentication and Feature Search Function* 09/19 – 08/21
  Sponsor: National Science Foundation (NSF), **Budget: $165k** (UD share as PI)

Professional Service

- **General Chair**
  - FinTech Technology Workshop ’24
- **General co-chair**
  - *IEEE* Reliable and Resilient Digital Manufacturing (R2DM) Workshop ’25, ’24, ’23, ’21
- **Associate Editor**
  - *Elsevier* Journal of Information Security and Applications (JISA), editorial board member, ’24 –
  - *IEEE* Embedded Systems Letters (ESL), editorial board member, ’24 –
  - *IEEE* Embedded Systems Letters (ESL) ’21 (special issue: Reliable and Resilient Digital Manufacturing*)*
- **Panel Reviewer**
  - *NSF* Secure and Trustworthy Cyberspace (SaTC) ’24, ’23, ’22
- **Organizing Committee**
  - Secure Delaware ’24, ’23
  - Fintech and Financial Institutions Research Conference ’25
  - *IEEE* International Conference on Computer Design (ICCD) ’19
- **Track co-chair/coordinator**
  - Fintech and Financial Institutions Research Conference ’25 (technical track)
  - *IEEE* Symposium on VLSI (ISVLSI) ’24, ’23, ’22 (track: System Design and Security)
  - *IEEE* Hardware Oriented Security and Trust (HOST) ’24 (track: Architecture Security)
- **External Review Committee**
  - *IEEE* International Symposium on Microarchitecture (MICRO) ’22, ’21, ’20
- **Technical Program Committee**
  - USENIX Security Symposium ’26, ’25
  - *ACM* Asia Conference on Computer and Communications Security (AsiaCCS) ’25
  - *IEEE* International Symposium on High-Performance Computer Architecture (HPCA) ’25
  - *IEEE* Hardware Oriented Security and Trust (HOST) ’26, ’25, ’24, ’23
  - *IEEE* International Conference on Computer Design (ICCD) ’25, ’24, ’22, ’21 (track: *Test, Verification, and Security*)
  - *IEEE* Symposium on On-Line Testing (IOLTS) ’25, ’24, ’23
  - *ACM* Great Lakes Symposium on VLSI (GLSVLSI) ’24, ’23
  - *IEEE* International Symposium on Microarchitecture (MICRO) ’23
  - *IEEE* MILCOM Artificial Intelligence for Cyber ’23
  - *IEEE* ICCAD Top Picks in Hardware and Embedded Security (ICCAD-TPHES) ’24, ’23
  - *IEEE/ACM* Design Automation Conference (DAC) ’21, ’20 (track: *Hardware Security II: Attack and Defense*)
  - *IEEE* Symposium on VLSI (ISVLSI) ’21, ’20, ’19 (track: *System Design and Security*)
  - *ACM* CPS & IoT Security and Privacy (CPSIoTSec) ’21, ’20
  - *Springer* Critical Infrastructure and Manufacturing System Security (CIMSS) ’21
  - *IEEE/IFIP* Dependable Systems and Networks (DSN) ’20
  - *IEEE* Asian Hardware Oriented Security and Trust (AsianHOST) ’20, ’19
  - *IEEE* International Conference on Computer Design (ICCD) ’19 (track: *Processor Architecture*)
  - *IFIP/IEEE* International Conference on Very Large Scale Integration (VLSI-SoC) ’19, ’18 (track: *Hardware Security*)
- **External Reviewer**
  - *IEEE* International Symposium on Performance Analysis of Systems and Software (’25)
- **Technical Referee**
  - *Nature* Machine Intelligence (’25)
  - *IEEE* Transactions on Computers (’25, ’22, ’20)

- *IEEE* Transactions on Computer-Aided Design (’25, ’24, ’23, ’20, ’19, ’18)
- *IEEE* Design & Test (’24, ’16)
- *ACM* Computing Surveys (’24)
- *ACM* Digital Threats Research and Practice (’23)
- *ASME* Journal of Computing and Information Science in Engineering (’23)
- *ACM* Transactions on Architecture and Code Optimization (’22, ’21)
- *Springer* Journal of Electronic Testing (’22, ’19)
- *IEEE* Consumer Electronics Magazine (’21)
- *IEEE* Computer Architecture Letters (’20)
- *IEEE* Transactions on Mobile Computing (’20)
- *Springer* Journal of Cryptographic Engineering (’20)
- *MDPI* Cryptography (’20)
- *Springer* Journal of Ambient Intelligence and Humanized Computing (’20, ’19)
- *IEEE* Micro (’19)
- *IEEE* Computer (’19)
- *IEEE* Access (’19)
- *IEEE* Embedded Systems Letters (’19, ’18)
- *IEEE* Transactions on Information Forensics and Security (’19, ’17, ’16)
- *IEEE* Transactions on Emerging Topics on Computing (’19, ’18, ’17)
- *Springer* Journal of Hardware and Systems Security (’17)
- *ACM* Transactions on Design Automation of Electronic Systems (’16, ’15)
- *Springer* Science China Information Sciences (’16)
- *Elsevier* Digital Signal Processing (’17)
- *Elsevier* Additive Manufacturing (’17)
- *IET* Electronics Letters (’17)
- *Elsevier* Journal of Information Security and Applications (’16)

- **Technical Sub-reviewer**
  - *IEEE* Transaction on Computer-Aided Design (’19, ’14)
  - *IEEE* Transactions on Computers (’16)
  - *IEEE* Transactions on Information Forensics and Security (’15, ’14, ’13)
  - *Elsevier* Future Generation Computer Systems (’15)
  - *ACM* Transactions on Embedded Computing Systems (’14)
  - *IEEE* Transactions on Emerging Topics on Computing (’13)
  - *IEEE/IFIP* Dependable Systems and Networks (’21)
  - *IEEE* Hardware Oriented Security and Trust (’20)
  - Asia and South Pacific Design Automation Conference (’19)
  - *IEEE* International Symposium on Information Theory (’19)
  - *IEEE* VLSI Test Symposium (’19, ’17)
  - *ACM* Asia Computer and Communications Security (’18, ’17)
  - *IEEE* European Test Symposium (’18)
  - *IEEE* Symposium on VLSI (’18, ’16, ’15, ’14)
  - *IEEE* International Test Conference (’18, ’17, ’15, ’14)
  - *IEEE* Asian Hardware Oriented Security and Trust (’17)
  - *IEEE* International Symposium on On-Line Testing and Robust System Design (’17, ’16)
  - *IEEE/ACM* Design Automation Conference (’16, ’15, ’14)
  - *IEEE/ACM* International Conference on Computer-Aided Design (’16, ’15)
  - *IEEE* International Conference on Design & Technology of Integrated Systems (’16, ’14)
  - *IEEE/ACM* CASES: Compilers, Architectures and Synthesis for Embedded Systems (’16, ’15)
  - Great Lakes Symposium on VLSI (’16)

- *Euromicro* Digital System Design (’16)
- *ACM* Workshop on Cyber-Physical Systems Security & Privacy (’15)
- *IEEE* International Conference on Computer Design (’13)

- **Session Chair/Moderator:**
  - *IEEE* International Conference on Computer-Aided Design ’24 (session: *Enhancing Simulation Efficiency through Multi-Core/GPU-Acceleration and Instruction-level Fault Injection*)
  - *IEEE* Hardware Oriented Security and Trust ’24 (session: *System Security*)
  - *IEEE* Symposium on VLSI ’22 (session: *Future Computing and Learning Techniques*)
  - *IEEE/EDAA* Design Automation and Test in Europe ’21 (session: *Attacks and defense mechanisms*)
  - *IEEE* International Conference on Computer-Aided Design ’20 (session: *Top Picks in Hardware and Embedded Security*)
  - *IEEE/ACM* Design Automation Conference ’19 (session: *Leaking like a Sieve: Exploits and Mitigations for Architecture Side Channels*)
  - *IEEE* Hardware Oriented Security and Trust ’19 (session: *(Anti)Reverse Engineering and Obfuscation*)
  - *IEEE* International Conference on Computer-Aided Design ’18 (sessions: *Designing and Assessing Secure Architectures*, *Approximate Computing*)
  - *IEEE* International Conference on Computer-Aided Design ’17 (session: *Synthesis and Security*)

Professional Affiliations

- **Senior Member**, Institute of Electrical and Electronics Engineers (IEEE) 05/25 –
- **Member**, Association for Computing Machinery (ACM) 01/23 –
- **Member**, International Association for Cryptologic Research (IACR) 04/22 –
- **Member**, Institute of Electrical and Electronics Engineers (IEEE) 10/18 – 04/25

University Service

- **Director:** Cybersecurity Minor, University of Delaware 04/23 –
- **Academic Advisor:** Computer Engineering Minor, University of Delaware 05/21 –
- **Academic Advisor:** CyberCorps Scholarship for Service, University of Delaware 09/24 –
- **Undergraduate Research Chair:** ECE Department, University of Delaware 01/22 – 09/22
- **Faculty Search Committee Chair:** ECE Department, University of Delaware 04/23 – 08/23
- **Faculty Search Committee:** ECE Department, University of Delaware 09/22 – 03/23
- **Faculty Search Committee:** ECE Department, University of Delaware 09/18 – 07/19
- **Graduate Committee:** ECE Department, University of Delaware 09/18 – 08/22
- **Undergraduate Committee:** ECE Department, University of Delaware 02/24 – 08/24
- **Cybersecurity Steering Committee:** ECE Department, University of Delaware 09/19 – 08/20
- **Training Working Group:** Data Science Institute, University of Delaware 03/25 –
- **Examiner:** Qualifying Exam, ECE Department 07/21 –
- **Qualification Exam Ad-Hoc Committee:** ECE Department, University of Delaware 10/21 – 05/22
- **NSF REU Site Mentor:** ECE Department, University of Delaware 06/23 –

Community Service and Global Outreach

- **Faculty Leader/Organizer:** Embedded Systems Challenge, Cyber Security Awareness Worldwide 01/19 –
- **Faculty Co-Organizer:** Capture the Flag, UD Center for Cybersecurity, Assurance and Privacy 01/21 –
- **Challenge Leader/Organizer:** Embedded Systems Challenge, Cyber Security Awareness Worldwide 06/15 – 11/17
- **External Advisor:** Advanced Placement (AP) Research course, Newark Charter High School 09/21 – 05/22

Teaching

- **University of Delaware, ECE Department**

  CPEG 475/675 - IoT and Embedded Systems Security Spring 2019

CPEG 475/675 - IoT and Embedded Systems Security	Fall 2019
CPEG 472/672 - Applied Cryptography	Spring 2020
ELEG 662 – Digital Systems Seminar	Spring 2020
CPEG 475/675 - IoT and Embedded Systems Security	Fall 2020
CPEG 472/672 - Applied Cryptography	Spring 2021
CPEG 697 - Advanced Cybersecurity [JP Morgan certificate]	Fall 2021
CPEG 475/675 - IoT and Embedded Systems Security	Fall 2021
CPEG 472/672 - Applied Cryptography	Spring 2022
ELEG 662 - Digital Systems Seminar	Spring 2022
CPEG 697 - Advanced Cybersecurity [JP Morgan certificate]	Fall 2022
CPEG 472/672 - Applied Cryptography	Spring 2023
ELEG 666 - Independent Study	Spring 2023
CPEG 472/672 - Applied Cryptography	Fall 2023
CPEG 365/465 - Introduction to Cybersecurity Engineering	Spring 2024
CPEG 666 - Independent Study	Summer 2024
CPEG 472/672 - Applied Cryptography	Fall 2024
CPEG 467/667 – Career and Success Development [NSF SFS]	Fall 2024
CPEG 365 - Introduction to Cybersecurity Engineering	Spring 2025
CPEG 467/667 – Career and Success Development [NSF SFS]	Spring 2025
CPEG 472/672 - Applied Cryptography	Fall 2025
CPEG/ELEG/CISC/MISY 465/665 - Introduction to Cybersecurity	Fall 2025

Doctoral Committees

- **Dimitris Mouris**, "*Private and Verifiable Computation*," University of Delaware, ECE Department, December 2023 (Committee Chair)
- **Fatema Bannat Wala**, "*The State of The Art in DNS Security and its Implications*," University of Delaware, ECE Department, June 2023 (Committee Member)
- **Charles Gouert**, "*Efficient General-Purpose Computation with Fully Homomorphic Encryption*," University of Delaware, ECE Department, July 2023 (Committee Chair)

Advisees and Interns

University of Delaware

- **Lars Folkerts**, Ph.D. student – University of Delaware, Trustworthy Computing Group 06/20 –
- **Rostin Shokri**, Ph.D. student – University of Delaware, Trustworthy Computing Group 09/23 –
- **Omar Ahmed**, Ph.D. student – University of Delaware, Trustworthy Computing Group 09/24 –
- **Kashfia Farheen**, Ph.D. student – University of Delaware, Trustworthy Computing Group 09/25 –
- **Sakib Anwar**, Ph.D. student – University of Delaware, Trustworthy Computing Group 09/25 –
- **Anish Chakraborty**, Independent Research Student – Charter School of Wilmington, DE 11/24 –
- **Katina Thongvong**, M.Sc. student – University of Delaware, Trustworthy Computing Group 01/25 –
- **Christos Madamopoulos**, REU scholar – University of Delaware, Trustworthy Computing Group 06/25 – 08/25
- **Mariel Diaz**, REU scholar – University of Delaware, Trustworthy Computing Group 06/25 – 08/25
- **Julian Lenis**, Graduate intern – University of Delaware, Trustworthy Computing Group 06/25 – 08/25
- **Oscar Hernan Olaya Gutierrez,** Ph.D. student – University of Delaware, ECE Department 01/24 – 06/25
- **Sasidhar Kunapuli**, Independent Research Student – Lynbrook High School, Santa Clara, CA 08/24 – 05/25
- **Jack Cartwright,** Undergraduate student – University of Delaware, Trustworthy Computing Group 06/24 – 12/24
- **Charles Gouert**, Ph.D. student – University of Delaware, Trustworthy Computing Group 09/18 – 09/24

- **Christos Madamopoulos**, REU scholar – University of Delaware, Trustworthy Computing Group 06/24 – 08/24
- **Melqui Aguirre**, Graduate intern – University of Delaware, Trustworthy Computing Group 06/24 – 08/24
- **Omar Ahmed**, M.Sc. student – University of Delaware, Trustworthy Computing Group 09/23 – 08/24
- **SuoAn Gao**, Ph.D. student – University of Delaware, ECE Department 09/23 – 03/24
- **Dimitris Mouris**, Ph.D. student – University of Delaware, Trustworthy Computing Group 01/19 – 02/24
- **Jhan Carlos Diaz Vidal**, Graduate intern – University of Delaware, Trustworthy Computing Group 06/23 – 12/23
- **Brandon Bauer**, REU scholar – University of Delaware, Trustworthy Computing Group 06/23 – 08/23
- **Mihailo Knezevic**, Graduate intern – University of Delaware, Trustworthy Computing Group 06/23 – 08/23
- **Brandon Cox,** Graduate independent study, University of Delaware, ECE Department 04/23 – 06/23
- **Ethan Conway**, Undergraduate student – University of Delaware, Trustworthy Computing Group 06/22 – 08/22
- **Paul Zaloga**, Undergraduate student – University of Delaware, Trustworthy Computing Group 06/22 – 08/22
- **Anusha Devisetty**, AP Research student – Newark Charter High School, DE 09/21 – 05/22
- **Nicholas Kater**, Undergraduate student – University of Delaware, Trustworthy Computing Group 07/20 – 08/21
- **Manish Chaudhary**, M.Sc. student – University of Delaware, Trustworthy Computing Group 09/19 – 05/21
- **Ryan Peterson**, Undergraduate student – University of Delaware, Trustworthy Computing Group 07/19 – 08/19
- **Maggie McGrath**, Undergraduate student – University of Delaware, Trustworthy Computing Group 01/19 – 02/19

New York University

- **Dimitris Mouris**, Graduate student (remote) – University of Athens 02/17 – 11/17
- **Abhinay Kumar**, Undergraduate summer intern (remote) – IIT Kanpur 05/17 – 07/17
- **Homer Gamil**, Undergraduate summer intern – New York University 05/16 – 06/16 and 05/17 – 06/17
- **Yilkal Abe**, Postgraduate summer research assistant – New York University 05/16 – 08/16
- **Dimitrios Tychalas**, Graduate research assistant – New York University 12/15 – 08/16

Honors and Awards

- **National Science Foundation (NSF) CAREER Award** (Secure & Trustworthy Cyberspace program) 07/23
- **Recognition: Delaware's 15 Most Influential Business Leaders** in 2023 by the Delaware News Journal 04/23
- **University of Delaware Research Foundation (UDRF) Award** 06/21
- **Pearl Brownstein Doctoral Research Award** for doctoral research showing the greatest promise (NYU) 05/18
- **New York University Ph.D. Student Fellowship** 01/13 – 12/17
- **Deborah Rosenthal Award** for outstanding performance on the Ph.D. Qualification Exam (NYU) 05/14
- **1st Place Award** at CSAW Embedded Security Challenge for the design of stealthy hardware Trojan horses 11/13
- **Advisee Honor: 1st Place Award** at CSAW Embedded Security Challenge for designing IoT covert channels (C. Gouert) 11/18
- **Advisee Honor: Graduate Fellowship** by Gerondelis Foundation (D. Mouris) 11/20
- **Advisee Honor: 3rd Place Award** at CSAW Hack3D for reverse engineering additive manufacturing files (N. Kater) 11/20
- **Advisee Honor: 1st Place Award** at ECE Research Day for privacy-preserving neural network inference (L. Folkerts and C. Gouert) 05/21
- **Advisee Honor: Graduate Faculty Award** on Computer Systems & Networks (C. Gouert) 05/21
- **Advisee Honor: 1st Place Best Presentation Award** at *IEEE* R2DM Workshop (D. Mouris) 09/21
- **Advisee Honor: 2nd Place Best Presentation Award** at *IEEE* R2DM Workshop (L. Folkerts) 09/21
- **Advisee Honor: Graduate Block Funding Fellowship** of ECE department (C. Gouert) 11/21
- **Advisee Honor: Graduate Student Excellence in Teaching Award** of UD College of Engineering (L. Folkerts) 04/22
- **Advisee Honor: 1st Place Award** at ECE Research Day for privacy-preserving multi-exit neural networks (L. Folkerts) 05/22
- **Advisee Honor: Graduate Fellowship Finalist** by NVIDIA (C. Gouert) 11/22

- **Advisee Honor: Doctoral Fellowship for Excellence** of UD Graduate College (C. Gouert) 02/23
- **Advisee Honor: Travel Grant** from NDSS 2023 Symposium (L. Folkerts) 03/23
- **Advisee Honor: Travel Grant** from PETS 2023 Symposium (D. Mouris) 05/23
- **Advisee Honor: 1st Place Award** at ECE Research Day for Accelerated Encrypted Computing on GPUs (C. Gouert) 05/23
- **Advisee Honor: First-year Scholarship** of ECE department (O. Gutierrez) 02/24
- **Advisee Honor: ECE Faculty Award** for Computer Engineering (L. Folkerts) 05/24
- **Advisee Honor: Builder Bounty 2024 Award** by Nillion for secure biometric authentication using private facial recognition (O. Ahmed, L. Folkerts) 08/24

Doctoral Dissertation Supervisor

[D1] **D. Mouris**, "Private and Verifiable Computation," *Ph.D. Dissertation*, University of Delaware, Newark, Delaware 19716, December 2023. (Primary advisor: N. Tsoutsos)

[D2] **C. Gouert**, "Efficient General-Purpose Computation with Fully Homomorphic Encryption," *Ph.D. Dissertation*, University of Delaware, Newark, Delaware 19716, July 2024. (Primary advisor: N. Tsoutsos)

Master's Thesis Supervisor

[M1] **O. Ahmed**, "Verifiable Encrypted Computations," *Master's Thesis*, University of Delaware, Newark, Delaware 19716, July 2024. (Primary advisor: N. Tsoutsos)

Scholarly Works

[An asterisk (*) indicates publications under University of Delaware affiliation; underline indicates advisee as main author.]

Book Chapters

[B1] **N.G. Tsoutsos*** and M. Maniatakos, "Lightweight Fault Tolerance for Secure Aggregation of Homomorphic Data," Security and Fault Tolerance in Internet of Things, Springer, 2019

Journal Articles

[J25] C. Madamopoulos and **N.G. Tsoutsos***, "3D printer audio and vibration side channel dataset for vulnerability research in additive manufacturing security," Data in Brief, Elsevier, 2024

[J24] O. Ahmed, C. Gouert and **N.G. Tsoutsos***, "PEEV: Parse Encrypt Execute Verify - A Verifiable FHE Framework," Access, IEEE, 2024

[J23] C. Gouert, and **N.G. Tsoutsos***, "Data Privacy Made Easy: Enhancing Applications with Homomorphic Encryption," Transactions on Design Automation of Electronic Systems, ACM, 2025

[J22] C. Gouert, D. Mouris and **N.G. Tsoutsos***, "HELM: Navigating Homomorphic Encryption through Gates and Lookup Tables," Transactions on Information Forensics and Security, IEEE, 2025

[J21] D. Mouris and **N.G. Tsoutsos***, "Masquerade: Verifiable Multi-Party Aggregation with Secure Multiplicative Commitments," Transactions on Internet Technology, ACM, 2024

[J20] C. Gouert, D. Mouris and **N.G. Tsoutsos***, "Juliet: A Robust and Configurable Encrypted Processor," Transactions on Computers, IEEE, 2024

[J19] T. Kaewnukultorn, S. Sepulveda-Mora, R. Broadwater, D. Zhu, **N.G. Tsoutsos*** and S. Hegedus, "Smart PV Inverter Cyberattack Detection using Hardware-in-the-Loop Test Facility," Access, IEEE, 2023

[J18] L. Folkerts, N. Kater and **N.G. Tsoutsos***, "Coeus: A Universal Search Engine for Digital Manufacturing," Access, IEEE, 2023

[J17] C. Gouert and **N.G. Tsoutsos***, "Dirty Metadata: Understanding A Threat to Online Privacy," Security & Privacy, IEEE, 2022

[J16] D. Mouris and **N.G. Tsoutsos***, "NFTs For 3D Models: Sustaining Ownership In Industry 4.0," Consumer Electronics Magazine, IEEE, 2022

[J15] D. Mouris, C. Gouert and **N.G. Tsoutsos***, "Privacy-Preserving IP Verification," Transactions on Computer-Aided Design of Integrated Circuits and Systems, IEEE, 2021

[J14] D. Mouris and **N.G. Tsoutsos***, "Zilch: A Framework for Deploying Transparent Zero-Knowledge Proofs," Transactions on Information Forensics and Security, IEEE, 2021

[J13] D. Mouris, C. Gouert, N. Gupta and **N.G. Tsoutsos***, "Peak your Frequency: Advanced Search of 3D CAD Files in the Fourier Domain," Access, IEEE, 2020

[J12] W. Li, G. Mac, **N.G. Tsoutsos***, N. Gupta and R. Karri, "Computer aided design (CAD) model search and retrieval using frequency domain file conversion," Additive Manufacturing, Elsevier, 2020

[J11] **N.G. Tsoutsos***, N. Gupta and R. Karri, "Cybersecurity Road Map for Digital Manufacturing," Computer, IEEE, 2020

[J10] O. Mazonka, E. Sarkar, E. Chielle, **N.G. Tsoutsos***, and M. Maniatakos, "Practical Data-in-Use Protection Using Binary Decision Diagrams," Access, IEEE, 2020

[J9] E. Chielle, **N.G. Tsoutsos***, O. Mazonka and M. Maniatakos, "Encrypt-Everything-Everywhere: ISA Extensions for Private Computation," Transactions on Dependable and Secure Computing, IEEE, 2020

[J8] **N.G. Tsoutsos** and M. Maniatakos, "Efficient Detection for Malicious and Random Errors in Additive Encrypted Computation," Transactions on Computers, IEEE, 2018

[J7] **N.G. Tsoutsos** and M. Maniatakos, "Anatomy of Memory Corruption Attacks and Mitigations in Embedded Systems," Embedded System Letters, IEEE, 2018

[J6] D. Mouris, **N.G. Tsoutsos** and M. Maniatakos, "TERMinator Suite: Benchmarking Privacy-Preserving Architectures," Computer Architecture Letters, IEEE, 2018

[J5] F. Chen, Y. Luo, **N.G. Tsoutsos**, M. Maniatakos, K. Shahin, N. Gupta, "Embedding Tracking Codes in Additive Manufactured Parts for Product Authentication," Advanced Engineering Materials, Wiley, 2018

[J4] O. Mazonka, **N.G. Tsoutsos** and M. Maniatakos, "Cryptoleq: A Heterogeneous Abstract Machine for Encrypted and Unencrypted Computation," Transactions on Information Forensics and Security, IEEE, 2016

[J3] S.E. Zeltmann, N. Gupta, **N.G. Tsoutsos**, M. Maniatakos, J. Rajendran and R. Karri, "Manufacturing and Security Challenges in 3D Printing," JOM, Springer, 2016

[J2] **N.G. Tsoutsos** and M. Maniatakos, "The HEROIC Framework: Encrypted Computation without Shared Keys," Transactions on Computer-Aided Design of Integrated Circuits and Systems, IEEE, 2015

[J1] **N.G. Tsoutsos** and M. Maniatakos, "Fabrication attacks: Zero-overhead malicious modifications enabling modern microprocessor privilege escalation," Transactions on Emerging Topics in Computing, IEEE, 2014

Conference Papers

[C31] R. Shokri, C. Gouert and **N.G. Tsoutsos***, "HElix: Genome Similarity Detection in the Encrypted Domain," IEEE International Conference on Computer Design (ICCD), 2025

[C30] C. Gouert and **N.G. Tsoutsos***, "PolyFHEmus: Rethinking Multiplication in Fully Homomorphic Encryption," IEEE Symposium on VLSI (ISVLSI), 2025

[C29] R. Shokri, and **N.G. Tsoutsos***, "CHESS: Compiling Homomorphic Encryption with Scheme Switching," IEEE Hardware Oriented Security and Trust (HOST) Symposium, 2025

[C28] L. Folkerts, and **N.G. Tsoutsos***, "Testing Robustness of Homomorphically Encrypted Split Model LLMs," Design, Automation & Test in Europe (DATE), 2025

[C27] C. Gouert, M. Ugurbil, D. Mouris, M. de Vega and **N.G. Tsoutsos***, "Ripple: Accelerating Programmable Bootstraps for FHE with Wavelet Approximations," Information Security Conference (ISC), 2024

[C26] D. Mouris, C. Patton, H. Davis, P. Sarkar and **N.G. Tsoutsos***, "Mastic: Private Weighted Heavy-Hitters and Attribute-Based Metrics," Privacy Enhancing Technologies Symposium (PETS), 2025

[C25] C. Gouert, V. Joseph, S. Dalton, C. Augonnet, M. Garland and **N.G. Tsoutsos***, "Hardware-Accelerated Encrypted Execution of General-Purpose Applications," Privacy Enhancing Technologies Symposium (PETS), 2025

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