

## CONTACT INFORMATION

Gilbert Place, Room 4304  
220 Gilbert Street  
Blacksburg, VA, 24060

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## RESEARCH INTERESTS

Security and Privacy  
Applied Cryptography  
Biometrics

## EDUCATION

- |  |             |
|--|-------------|
| <b>University of South Florida</b> , Tampa, Florida, United States   | 2019 – 2020 |
| Doctor of Philosophy, <a href="#">Computer Science</a>   |             |
| <ul style="list-style-type: none"> <li>Dissertation: <i>Privacy-Preserving and Functional Information Systems</i></li> <li>Advisor: <a href="#">Dr. Attila Altay Yavuz</a></li> </ul>                        |             |
| <b>Oregon State University</b> , Corvallis, Oregon, United States  | 2015 – 2018 |
| PhD student, <a href="#">Computer Science</a>  |             |
| <ul style="list-style-type: none"> <li>Advisor: <a href="#">Dr. Attila Altay Yavuz</a></li> </ul>  |             |
| Phi Kappa Phi Honor Society (OSU Chapter)  |             |
| <b>Chonnam National University</b> , Gwangju, South Korea  | 2012 – 2014 |
| Master of Science, <a href="#">Computer Science</a>  |             |
| <ul style="list-style-type: none"> <li>Thesis: <i>Gait Authentication on Mobile Phone Using Pattern Recognition and Biometric Cryptosystem</i></li> <li>Advisor: <a href="#">Dr. Deokjai Choi</a></li> </ul> |             |
| <b>University of Science VNU-HCMC</b> , Ho Chi Minh city, Vietnam  | 2006 – 2010 |
| Bachelor of Science, <a href="#">Computer Science</a>  |             |
| <ul style="list-style-type: none"> <li>Thesis: <i>Integrating Camera Based Supervision System to Access Control Devices and Applications</i></li> <li>Advisor: <a href="#">Dr. Thuc D. Nguyen</a></li> </ul> |             |

## PROFESSIONAL EXPERIENCES

- |  |                     |
|--|---------------------|
| <b>Assistant Professor</b> , <a href="#">Department of Computer Science, Virginia Tech</a> , Blacksburg, VA  | Jan 2021 – current  |
| <b>Postdoctoral Fellow</b> , <a href="#">Computer Science, Carnegie Mellon University</a> , Pittsburgh, PA   | Aug 2020 – Dec 2020 |
| <ul style="list-style-type: none"> <li>Host: Prof. <a href="#">Elaine Shi</a></li> </ul>                     |                     |
| <b>Research Associate</b> , <a href="#">CSE, University of South Florida</a> , Tampa, FL                     | Aug 2020 – Dec 2020 |
| <b>Research Intern</b> , <a href="#">Robert Bosch Research &amp; Technology Center</a> , Pittsburgh, PA, USA | 2016, 2018          |
| <b>Lecturer</b> , <a href="#">Saigon Technology University</a> , Ho Chi Minh city, Vietnam                   | 2014 – 2015         |
| <b>Research Scientist</b> , <a href="#">RedOne Technologies Co., Ltd.</a> , Gwangju, South Korea             | 2014 – 2015         |

## GRANTS

- Collaborative Research: SaTC: CORE: Medium: Distributed Computing in Effect: Towards Trustworthy, Resilient and Secure NextG Mobile Networks** July 2024 – June 2028  
*PI(s)*: Attila A. Yavuz (Lead PI, University of South Florida), Mehran Mozaffari Kermani (Co-PI, University of South Florida), Bechir Hamdaoui (PI, Oregon State University), Thang Hoang (PI, Virginia Tech)  
*Sponsor*: National Science Foundation (NSF)  
*Total*: \$1,200,000 (*Personal share*: \$320,799)
- Student Travel Grant for 2024 IEEE Symposium on Security and Privacy** July 2024 – June 2025  
*PI(s)*: Thang Hoang (Sole PI, Virginia Tech)  
*Sponsor*: Army Research Laboratory (ARL)

Total: \$10,000

**Travel: NSF Student Travel Grant for 2024 IEEE Symposium on Security and Privacy** May 2024 – April 2025

PI(s): Thang Hoang (Sole PI, Virginia Tech)

Sponsor: National Science Foundation (NSF)

Total: \$25,000

**Privacy-Aware Federated Learning in Heterogeneous IoT**

July 2023 – June 2024

PI(s): Thang Hoang (Lead PI, Virginia Tech), Tran Phuong (PI, Old Dominion University)

Sponsor: Commonwealth Cyber Initiative Southwest Virginia (CCI SWVA), FY24 Cybersecurity Research

Total: \$75,000 (Personal share: \$45,000)

**Trustworthy Services for Autonomous Mission Computing Systems**

Jun 2023 – May 2024

PI(s): Jin-Hee Cho (Lead PI, Virginia Tech), Bo Ji (Co-PI, Virginia Tech), and Thang Hoang (Co-PI, Virginia Tech)

Sponsor: Commonwealth Cyber Initiative Southwest Virginia (CCI SWVA), Research Engagement Program

Total: \$20,000 (Personal share: \$6,667)

**Privacy-Preserving and Trustworthy AI for Smart Transportation**

Mar 2023 – Jun 2024

PI(s): Thang Hoang (Sole PI, Virginia Tech)

Sponsor: 4-VA, Pre-Tenure Faculty & Collaborative Research Grants

Total: \$45,000

**New Cryptographic Audit Tools for Effective Data Integrity Attestation in Large-scale**

**Storage-as-a-service Infrastructure**

July 2022 – Jun 2023

PI(s): Thang Hoang (Sole PI, Virginia Tech)

Sponsor: Commonwealth Cyber Initiative Southwest Virginia (CCI SWVA), Seeding Funding Program

Total: \$20,000

**Verifiable and Privacy-Preserving Machine Learning as a Service**

Jun 2022 – Aug 2022

PI(s): Thang Hoang (Sole PI, Virginia Tech)

Sponsor: Commonwealth Cyber Initiative Southwest Virginia (CCI SWVA), Research Engagement Program

Total: \$15,000

**Towards Privacy-Enhancing Technologies**

Dec 2020 – current

PI(s): Thang Hoang (Sole PI, Virginia Tech)

Sponsor: Robert Bosch, unrestricted gift

Total: \$100,000

**ACSAC Student Conferenceship Travel Grant**

2016

Total: \$1,000

## PUBLICATIONS

*\*Underlined indicates my current/former advisees at the time of initial/completion.*

### Journals

- [1] Haodi Wang, Rongfang Bie, and **Thang Hoang**, “An Efficient and Zero-Knowledge Classical Machine Learning Inference Pipeline”. *IEEE Transactions on Dependable and Secure Computing* ([IEEE TDSC](#)), 2024.  
doi:10.1109/TDSC.2024.3435010
- [2] Thao M. Dang, Thuc D. Nguyen, **Thang Hoang**, Hyunseok Kim, Andrew Beng Jin Teoh, and Deokjai Choi, “AVET: A Novel Transform Function to Improve Cancellable Biometrics Security”. *IEEE Transactions on Information Forensics and Security* ([IEEE TIFS](#)), 2022.  
doi:10.1109/TIFS.2022.3230212
- [3] Lam Tran, **Thang Hoang**, Thuc Nguyen, Hyunil Kim, and Deokjai Choi, “Multi-Model Long Short-Term Memory Network for Gait Recognition Using Window-Based Data Segment”. *IEEE Access*, Volume 9, pp. 23826–23839, February 2021.  
doi:10.1109/ACCESS.2021.3056880
- [4] **Thang Hoang**, Attila A. Yavuz, and Jorge Guajardo, “A Multi-server ORAM Framework with Constant Client Bandwidth Blowup”. *ACM Transactions on Privacy and Security* ([ACM TOPS](#)), Volume 23, Issue 1, pp. 1–35, February 2020.  
doi:10.1145/3369108

- [5] **Thang Hoang**, Attila A. Yavuz, and Jorge Guajardo, “A Secure Searchable Encryption Framework for Privacy-Critical Cloud Storage Services”. *IEEE Transactions on Services Computing (IEEE TSC)*, Volume 14, Issue 6, pp. 1675–1689, November 2021.  
doi:10.1109/TSC.2019.2897096
- [6] **Thang Hoang**, Ceyhun D. Ozkaptan, Gabriel Hackebeil, and Attila A. Yavuz, “Efficient Oblivious Data Structures for Database Services on the Cloud”. *IEEE Transactions on Cloud Computing (IEEE TCC)*, Volume 9, Issue 2, pp. 598–609, April 2021.  
doi:10.1109/TCC.2018.2879104
- [7] **Thang Hoang**, Attila A. Yavuz, F. Betül Durak, and Jorge Guajardo, “A Multi-Server Oblivious Dynamic Searchable Encryption Framework”. *Journal of Computer Security (JCS)*, IOS Press, Volume 27, Issue 6, pp. 649–676, 2019.  
doi:10.3233/JCS-191300
- [8] **Thang Hoang**, Thuc Nguyen, and Deokjai Choi, “Gait Authentication on Mobile Phone Using Biometric Cryptosystem and Fuzzy Commitment Scheme”. *International Journal of Information Security (IJIS)*, Volume 14, Issue 6, pp. 549–560, November 2015.  
doi:10.1007/s10207-015-0273-1
- [9] **Thang Hoang** and Deokjai Choi, “Secure and Privacy Enhanced Gait Authentication on Smart Phone”. *The Scientific World Journal (TSWJ)*, Volume 2014, May 2014.  
doi:10.1155/2014/438254
- [10] **Thang Hoang**, Thuc D. Nguyen, Chuyen Luong, Son Do, and Deokjai Choi, “Adaptive Cross-Device Gait Recognition Using Mobile Accelerometer”. *Journal of Information Processing System (JIPS)*, Volume 9, Issue 2, pp. 333–348, June 2013.  
doi:10.3745/JIPS.2013.9.2.333
- [11] Viet Q. Vo, **Thang Hoang**, and Deokjai Choi, “Personalization in Mobile Activity Recognition System using K-Medoids Clustering Algorithm”. *International Journal of Distributed Sensor Networks (IJDSN)*, Volume 2013, June 2013.  
doi:10.1155/2013/315841

#### Conferences

- [12] Hoang-Dung Nguyen, Jorge Guajardo, and **Thang Hoang**, “Client-Efficient Online-Offline Private Information Retrieval”, in *25<sup>th</sup> Privacy Enhancing Technologies Symposium (PETS)*, July 2025, Washington DC, USA. (Acceptance rate: %)   
doi:
- [13] Munshi Rejwan Ala Muid, Taejoong Chung, and **Thang Hoang**, “AccuRevoke: Enhancing Certificate Revocation with Distributed Cryptographic Accumulators”, in *46<sup>th</sup> IEEE Symposium on Security and Privacy (S&P)*, May 2025, San Francisco, CA, USA. (Acceptance rate: 14.8%)   
doi:
- [14] Tung Le and **Thang Hoang**, “Hermes: Efficient and Secure Multi-Writer Encrypted Database”, in *46<sup>th</sup> IEEE Symposium on Security and Privacy (S&P)*, May 2025, San Francisco, CA, USA. (Acceptance rate: 14.8%)   
doi:
- [15] Arman Riasi, Jorge Guajardo, and **Thang Hoang**, “Privacy-Preserving Verifiable Neural Network Inference Service”, in *40<sup>th</sup> Annual Computer Security Applications Conference (ACSAC)*, December 2024, Waikiki, HI, USA. (Acceptance rate: 19.7%)   
doi:
- [16] Rouzbeh Behnia, Arman Riasi, Mohammadreza Ebrahimi, Sherman S. M. Chow, Balaji Padmanabhan, and **Thang Hoang**, “Efficient Secure Aggregation for Privacy-Preserving Federated Machine Learning”, in *40<sup>th</sup> Annual Computer Security Applications Conference (ACSAC)*, December 2024, Waikiki, HI, USA. (Acceptance rate: 19.7%)   
doi:
- [17] Atharva Haldankar, Arman Riasi, Hoang-Dung Nguyen, Tran Phuong, and **Thang Hoang**, “Breaking Privacy in Model-Heterogeneous Federated Learning”, in *27<sup>th</sup> International Symposium on Research in Attacks, Intrusions and Defenses (RAID)*, September 2024, Padua, Italy. (Acceptance rate: 25%)   
doi:/10.1145/3678890.3678905

- [18] Tung Le, Rouzbeh Behnia, Jorge Guajardo, and **Thang Hoang**, “MUSES: Efficient Multi-User Searchable Encrypted Database”, in *33<sup>rd</sup> USENIX Security Symposium (USENIX Security)*, August 2024, Philadelphia, PA, USA. (Acceptance rate: 19.1%)
- [19] Pengzhi Huang, **Thang Hoang**, Yueying Li, Elaine Shi, and G. Edward Suh, “Efficient Privacy-Preserving Machine Learning with Lightweight Trusted Hardware”, in *24<sup>th</sup> Privacy Enhancing Technologies Symposium (PETS)*, July 2024, Bristol, United Kingdom. (Acceptance rate: 20.9%)  
doi:10.56553/popets-2024-0119
- [20] Jacob Haltiwanger and **Thang Hoang**, “Exploiting Update Leakage in Searchable Symmetric Encryption”, in *14<sup>th</sup> ACM Conference on Data and Application Security and Privacy (CODASPY)*, June 2024, Porto, Portugal. (Acceptance rate: 21.3%)  
doi:10.1145/3626232.3653260
- [21] Trevor Miller, Bobby Alvarez, and **Thang Hoang**, “VTBC: Privatizing the Volume and Timing of Transactions for Blockchain Applications”, in *32<sup>nd</sup> International Conference on Computer Communications and Networks (ICCCN)*, July 2023, Honolulu, HI, USA. (Acceptance rate: 30.3%)  
doi:10.1109/ICCCN58024.2023.10230098
- [22] Tung Le and **Thang Hoang**, “MAPLE: A Metadata-Hiding Policy-Controllable Encrypted Search Platform with Minimal Trust”, in *23<sup>rd</sup> Privacy Enhancing Technologies Symposium (PETS)*, July 2023, Lausanne, Switzerland. (Acceptance rate: 23.5%)  
doi:10.56553/popets-2023-0094
- [23] Haodi Wang and **Thang Hoang**, “ezDPS: An Efficient and Zero-Knowledge Machine Learning Inference Pipeline”, in *23<sup>rd</sup> Privacy Enhancing Technologies Symposium (PETS)*, July 2023, Lausanne, Switzerland. (Acceptance rate: 23.5%)  
doi:10.56553/popets-2023-0061
- [24] Tung Le, Pengzhi Huang, Attila A. Yavuz, Elaine Shi, and **Thang Hoang**, “Efficient Dynamic Proof of Retrievability for Cold Storage”, in *the Annual Network and Distributed System Security Symposium (NDSS)*, February 2023, San Diego, CA, USA. (Acceptance rate: 15.2%)  
doi:10.14722/ndss.2023.23307
- [25] Mohit Bhasi Thazhath, Jan Michalak, and **Thang Hoang**, “Harpocrates: Privacy-Preserving and Immutable Audit Log for Sensitive Data Operations”, in *4<sup>th</sup> IEEE International Conference on Trust, Privacy and Security in Intelligent Systems, and Applications (TPS-ISA)*, December 2022, Virtual Event.  
doi:10.1109/TPS-ISA56441.2022.00036
- [26] Hai-Van Dang, Tran Phuong, Thuc Nguyen, and **Thang Hoang**, “ZAC: Efficient Zero-Knowledge Dynamic Universal Accumulator and Application to Zero-Knowledge Elementary Database”, in *4<sup>th</sup> IEEE International Conference on Trust, Privacy and Security in Intelligent Systems, and Applications (TPS-ISA)*, December 2022, Virtual Event.  
doi:10.1109/TPS-ISA56441.2022.00038
- [27] Attila A Yavuz, Saif Nouma, **Thang Hoang**, Duncan Earl, and Scott Packard, “Distributed Cyber-infrastructures and Artificial Intelligence in Hybrid Post-Quantum Era”, in *4<sup>th</sup> IEEE International Conference on Trust, Privacy and Security in Intelligent Systems, and Applications (TPS-ISA)*, December 2022, Virtual Event. (Invited Paper)  
doi:10.1109/TPS-ISA56441.2022.00014
- [28] Jiaheng Zhang, Tiancheng Xie, **Thang Hoang**, Elaine Shi, and Yupeng Zhang, “Polynomial Commitment with a One-to-Many Prover and Applications”, in *31<sup>st</sup> USENIX Security Symposium (USENIX Security)*, August 2022, Boston, MA, USA. (Acceptance rate: 18.1%)
- [29] Weikeng Chen, **Thang Hoang**, Jorge Guajardo, and Attila A. Yavuz, “Titanium: A Metadata-Hiding File-Sharing System with Malicious Security”, in *the Annual Network and Distributed System Security Symposium (NDSS)*, February 2022, San Diego, CA, USA. (Acceptance rate: 16.2%)  
doi:10.14722/ndss.2022.24161

- [30] Efe Ulas Akay Seyitoglu, Attila A. Yavuz, and **Thang Hoang**, “Proof-of-Useful-Randomness: Mitigating the Energy Waste in Blockchain Proof-of-Work”, in *18<sup>th</sup> International Conference on Security and Cryptography (SECRYPT)*, July 2021 (virtual). (Acceptance rate: 18.4%)  
doi:10.5220/0010519204120419
- [31] **Thang Hoang**, Rouzbeh Behnia, Yeongjin Jang, and Attila A. Yavuz, “MOSE: Practical Multi-User Oblivious Storage via Secure Enclaves”, in *10<sup>th</sup> ACM Conference on Data and Application Security and Privacy (CODASPY)*, March 2020, New Orleans, LA, USA. (Acceptance rate: 19.4%)  
doi:10.1145/3374664.3375749
- [32] **Thang Hoang**, Jorge Guajardo, and Attila A. Yavuz, “MACAO: A Maliciously-Secure and Client-Efficient Active ORAM Framework”, in *the Annual Network and Distributed System Security Symposium (NDSS)*, February 2020, San Diego, CA, USA.  
doi:10.14722/ndss.2020.24313 (Acceptance rate: 17.4%)
- [33] **Thang Hoang**, Muslum O. Ozmen, Yeongjin Jang, and Attila A. Yavuz, “Hardware-Supported ORAM in Effect: Practical Oblivious Search and Update on Very Large Dataset”, in *19<sup>th</sup> Privacy Enhancing Technologies Symposium (PETS)*, July 2019, Stockholm, Sweden. (Acceptance rate: 22.1%)  
doi:10.2478/popets-2019-0010
- [34] **Thang Hoang**, Attila A. Yavuz, F. Betül Durak, and Jorge Guajardo, “Oblivious Dynamic Searchable Encryption on Distributed Cloud Systems”, in *32<sup>nd</sup> Annual IFIP WG 11.3 Conference on Data and Applications Security and Privacy (DBSec)*, July 2018, Bergamo, Italy. (Acceptance rate: 32%) **\*Best Paper Award\***  
doi:10.1007/978-3-319-95729-6\_8
- [35] Muslum O. Ozmen, **Thang Hoang**, and Attila A. Yavuz, “Forward-Private Dynamic Searchable Symmetric Encryption with Efficient Search”, in *IEEE International Conference on Communications (ICC)*, May 2018, Kansas City, MO, USA. (Acceptance rate: 39.9%)  
doi:10.1109/ICC.2018.8422480
- [36] Lam Tran, **Thang Hoang**, Thuc Nguyen, and Deokjai Choi, “Improving Gait Cryptosystem Security Using Gray Code Quantization and Linear Discriminant Analysis”, in *International Conference on Information Security (ISC)*, November 2017, Ho Chi Minh, Vietnam. (Acceptance rate: 25.7%)  
doi:10.1007/978-3-319-69659-1\_12
- [37] **Thang Hoang**, Ceyhun D. Ozkaptan, Attila A. Yavuz, Jorge Guajardo, and Tam Nguyen, “S<sup>3</sup>ORAM: A Computation-Efficient and Constant Client Bandwidth Blowup ORAM with Shamir Secret Sharing”, in *24<sup>th</sup> ACM Conference on Computer and Communications Security (CCS)*, October 2017, Dallas, TX, USA. (Acceptance rate: 17.9%)  
doi:10.1145/3133956.3134090
- [38] **Thang Hoang**, Attila A. Yavuz, and Jorge Guajardo, “Practical and Secure Dynamic Searchable Encryption via Oblivious Access on Distributed Data Structure”, in *32<sup>nd</sup> Annual Computer Security Applications Conference (ACSAC)*, December 2016, Los Angeles, CA, USA. (Acceptance rate: 22.8%)  
doi:10.1145/2991079.2991088
- [39] **Thang Hoang**, Deokjai Choi, and Thuc Nguyen, “On the Instability of Sensor Orientation in Gait Verification on Mobile Phone”, in *12<sup>th</sup> International Conference on Security and Cryptography (SECRYPT)*, July 2015, Colmar, France. (Acceptance rate: 10.4%)  
doi:10.5220/0005572001480159
- [40] **Thang Hoang** and Deokjai Choi, “A Biometric Cryptosystem Using Gait Captured from Mobile Accelerometer”, in *FTRA International Symposium on Ubiquitous Computing and Embedded Systems*, December 2013, Danang, Vietnam. **\*Best Paper Award\*** (extended version published in [9])
- [41] **Thang Hoang**, Deokjai Choi, Viet Vo, Anh Nguyen, and Thuc Nguyen, “A Lightweight Gait Authentication on Mobile Phone Regardless of Installation Error”, in *28<sup>th</sup> International Information Security and Privacy Conference (IFIP SEC)*, July 2013, Auckland, New Zealand. (Acceptance rate: 37.3%)  
doi:10.1007/978-3-642-39218-4\_7



- [42] Chuyen Luong, Son Do, **Thang Hoang**, and Deokjai Choi, “A Mobility Prediction Algorithm for The Seamless Handoff”, in *5<sup>th</sup> International Conference Ubiquitous and Future Networks (ICUFN)*, July 2013, Danang, Vietnam. doi:10.1109/ICUFN.2013.6614854
- [43] Viet Q. Vo, **Thang Hoang**, and Deokjai Choi, “Adaptive Energy-Saving Strategy for Activity Recognition on Mobile Phone”, in *IEEE International Symposium on Signal Processing and Information Technology (ISSPIT)*, December 2012, Ho Chi Minh city, Vietnam. doi:10.1109/ISSPIT.2012.6621267
- [44] **Thang Hoang**, Viet Q. Vo, Thuc D. Nguyen, and Deokjai Choi, “Gait Identification Using Accelerometer on Mobile Phone”, in *1<sup>st</sup> International Conference on Control, Automation and Information Sciences (ICCAIS)*, November 2012, Ho Chi Minh, Vietnam. **\*Best Paper Award\*** doi:10.1109/ICCAIS.2012.6466615

## PATENTS

- [1] Rouzbeh Behnia, Mohammadreza Ebrahimi, **Thang Hoang**, and Balaji Padmanabhan, , “FESA: Fast and Efficient Secure Aggregation for Privacy-Preserving Federated Learning”, Application # 63/490814, Filed: Mar 17, 2023.
- [2] **Thang Hoang** and Jorge Guajardo, “Secure and Efficient Multi-server Oblivious Random Access Machine in a Malicious Execution Environment”, US Patent US20210135850A1, Filed: Nov 06, 2019, Issued: May 06, 2021.
- [3] Attila A. Yavuz, Jorge Guajardo, and **Thang Hoang**, “Method and System for Search Pattern Oblivious Dynamic Symmetric Searchable Encryption”, US Patent US11144663B2, Filed: Dec 28, 2017, Issued: Oct 21, 2021.
- [4] **Thang Hoang**, Muslum O. Ozmen, and Attila A. Yavuz, “Forward-Private Dynamic Searchable Symmetric Encryption with Efficient Search”, US Patent US10922273B1, Filed: Oct 10, 2017, Issued: Feb 16, 2021.
- [5] Deokjai Choi, **Thang Hoang**, Thuc D. Nguyen, and Thu D. Tran, “Device and Method for Authentication System using Prime Number”, Korea Patent 10-1754796, Filed: September 17, 2014, Issued: June 30, 2017.
- [6] Deokjai Choi and **Thang Hoang**, “Secure Authentication System, and its Device and Method for Biometric Information, Derived Information from User Characteristic Information”, Korea Patent 10-1622253, Filed: July 09, 2014, Issued: May 12, 2016.
- [7] **Thang Hoang**, Deokjai Choi, and Chilwoo Lee, “Gait Authentication System and its Device and Method”, Korea Patent 10-1622252, Filed: December 11, 2013, Issued: May 12, 2016.

## AWARDS AND HONORS

- Best Paper Award in IFIP DBSec 2018, Bergamo, Italy 2018
- Best Paper Award in UCES 2013 symposium, Da Nang, Vietnam 2013
- Best Paper Award for the most innovative application in ICCAIS 2012, Ho Chi Minh city, Vietnam 2012

## TEACHING

I have been teaching the following courses at undergraduate (4XXX) and graduate (5XXX/6XXX) levels at Virginia Tech

- CS 6204: Advanced Topics in Systems Spring 2025
- CS 5594: Blockchain Technologies Spring 2021, Spring 2023, Spring 2024
- CS 4104: Data and Algorithm Analysis Fall 2022, Fall 2023, Fall 2024
- CS 4274: Secure Computing Capstone Spring 2022

## MENTORING

I am fortunate to work with the following talented students:

### Current PhD Students

- Tung Le Fall 2021 – present
- Arman Riasi Fall 2022 – present
- Hoang-Dung Nguyen Spring 2023 – present
- Changqi Sun Fall 2023 – present

- Edmund Amanor Fall 2023 – present
- Munshi Ala Muid (co-advise w/ Prof. Tijay Chung) Fall 2023 – present

### Visiting Students

- Haodi Wang, PhD student, Beijing Normal University Jan 2021 – Dec 2023

### Graduated

- Atharva Haldankar, MS Spring 2024
  - *Thesis:* Breaking Privacy in Model-Heterogeneous Federated Learning
- Jacob Haltiwanger, MS Spring 2024
  - *Thesis:* Exploiting Update Leakage in Searchable Symmetric Encryption
- Trevor Miller, MS Spring 2023
  - *Thesis:* Privatizing the Volume and Timing of Transactions for Blockchain Applications
- Mohit Bhasi, MS Spring 2022
  - *Thesis:* Privacy-Preserving and Immutable Audit Log for Sensitive Data Operations
  - *First Position:* Software Engineer at Robinhood (May 2022)

### Current and Past Undergraduate Students

- Jan Michalak
- Bobby Alvarez
- Atharva Haldankar

## PROFESSIONAL SERVICES

### Proposal Panelist

- 2024 NSF Review Panelist (2 panels)

### Organizing Committee

- IEEE S&P, Student Travel Grants Chair (2024)
- IEEE S&P, Short Talks Chair (2022, 2023)
- Vietnam Conference on Blockchain Computing (CBC), Program Chair (2022)

### Program Committee

- SafeThings (IEEE/ACM Workshop) (2025), IEEE MASS (2022-2023, 2025), PETS (2023-2025), VRICS (2024) ACSAC (2021-2024), Inscript (2023), WWW (2022), IEEE ICCCN (2021), CosDEO (PerCom Workshop) (2018, 2020)

### Journal Reviewer

- IEEE Transactions on Dependable and Secure Computing (2017-2025), IEEE Transactions on Services Computing (2022), ACM Digital Threats: Research and Practice (2020, 2021), ACM Transactions on Privacy and Security (2017, 2020, 2022, 2024), IEEE Transactions on Information Forensics and Security (2018-2023), IEEE Transactions on Cybernetics (2019), IEEE Transactions on Cloud Computing (2019, 2021, 2023), Elsevier Computers & Security (2020, 2025), Elsevier Information Sciences (2017), Elsevier Journal of Information Security and Applications (2019)

### Conference Reviewer

- ACM CCS (2021), IEEE S&P (2021), PETS (2020-2022), ACSAC (2017-2019), ASIACRYPT (2018), EUROCRYPT (2018), IEEE CSF (2021), IEEE CNS (2019), IFIP DBSec (2018, 2019), WiSec (2020), WWW (2019)

### Graduate Thesis Committee

- Atul Bharadwaj, MS, Computer Science, Virginia Tech (Defended Spring 2025)
- Akash Mittal, MS, Computer Science, Virginia Tech (Defended Fall 2024)
- Fatemeh Sharifi, Ph.D, Electrical and Computer Engineering, (Preliminary Exam, Fall 2024)
- Benjamin Asad Akhtar, MS, Electrical and Computer Engineering, Virginia Tech (Defended Summer 2024)
- Akhilesh Marathe, MS, Electrical and Computer Engineering, Virginia Tech (Defended Spring 2024)
- Rishi Ranjan, MS, Computer Science, Virginia Tech (Defended Spring 2024)
- Ashrith Reddy Thukkaraju, MS, Computer Science, Virginia Tech (Defended Fall 2023)
- Protick Bhowmick, MS, Computer Science, Virginia Tech (Defended Fall 2023)
- Leo Stone, MS, Computer Science, Virginia Tech (Defended Spring 2023)

### Other Services

- PhD Qualifier Exam Chair, Department of Computer Science, Virginia Tech 2024

- PhD Qualifier Exam Committee, Department of Computer Science, Virginia Tech 2023
- Graduate Admission Committee, Department of Computer Science, Virginia Tech 2021 – 2023

## TALKS

### *Zero-Knowledge Machine Learning Inference Pipeline*

- Invited keynote talk at 4th ICDM Workshop on Machine Learning for Cybersecurity (MLC) 2024 Remote, Dec 2024
- Invited keynote talk at BK FinTech Conference 2024 Remote, Jun 2024

### *Privacy-Preserving and Trustworthy Storage-as-a-service*

- Invited talk at Bosch Pittsburgh, PA, May 2024
- Invited talk at Secure and Data Technology Workshop Blacksburg, VA, Apr 2024

### *Towards Practical Dynamic Proof of Retrievability*

- Invited talk at SIAM Southeastern Atlantic Section Annual Meeting Blacksburg, VA, Mar 2023

### *Harpocrates: Privacy-Preserving and Immutable Audit Log for Sensitive Data Operations*

- Presented at Vietnam Conference on Blockchain Computing (CBC) Remote, Dec 2022

### *Privacy-Preserving Collaborative Information Processing*

- Research Seminar at Robert Bosch RTC Remote, Feb 2022

### *Privacy-Preserving and Functional Information Systems*

- Research Seminar at Robert Bosch RTC Remote, Jan 2021
- Seminar at Binghamton University Binghamton, NY, Mar 2020
- Seminar at Virginia Tech Remote, Mar 2020
- Seminar at University of Iowa Remote, Apr 2020
- Seminar at University of South Florida Tampa, FL, Apr 2020

### *MACAO: A Maliciously-Secure and Client-Efficient Active ORAM Framework*

- Presented at ISOC NDSS 2020 San Diego, CA, USA, Feb 2020

### *Distributed ORAM for Data Outsourcing*

- Seminar at Cornell University Ithaca, NY, USA, Nov 2019

### *S<sup>3</sup>ORAM: A Computation-Efficient and Constant Client Bandwidth Blowup ORAM with Shamir Secret Sharing*

- Presented at ACM CCS 2017 Dallas, TX, USA, Oct 2017

### *Practical and Secure Dynamic Searchable Encryption via Oblivious Access on Distributed Data Structure*

- Presented at ACSAC 2016 Los Angeles, CA, USA, Dec 2016

### *Wireless Network Security*

- Seminar at Eduroam Workshop, University of Indonesia Depok, Indonesia, Aug 2015

### *On the Instability of Sensor Orientation in Gait Verification on Mobile Phone*

- Presented at SECUREPT 2015 Colmar, France, Jul 2015

### *A Lightweight Gait Authentication on Mobile Phone Regardless of Installation Error*

- Presented at IFIP SEC 2013 Auckland, New Zealand, Jul 2013

### *Gait Identification Using Accelerometer on Mobile Phone*

- Presented at IEEE ICCAIS 2012 Ho Chi Minh city, Vietnam, Nov 2012