

# VIET TUNG HOANG

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Department of Computer Science  
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## CURRENT POSITION

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Assistant Professor  
Florida State University

8/2016 – Present

## EDUCATION

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University of California, Davis  
Ph.D. in Computer Science  
Dissertation: “Foundations of garbled circuits”  
Advisor: Prof. Phillip Rogaway

Davis, CA, USA  
2008 – 2013

National University of Singapore  
First-class honor, B.S. in Computer Engineering

Singapore  
2003 – 2007

## RESEARCH INTERESTS

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Cryptography, programming languages, privacy, and algorithms.

## ACADEMIC HONORS

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- Publication [5] is invited to Journal of Cryptology as one of the top-ranked papers at CRYPTO 2016.
- Publication [6] is selected for Best Paper Award at CCS 2015.
- Publication [9] is selected for Best Paper Honorable Mention at EUROCRYPT 2015 and invited to Journal of Cryptology.
- Publication [12] is invited to Journal of Cryptology as one of the top-ranked papers at CRYPTO 2013.
- UC Davis Summer Graduate Student Researcher Award, 2010.
- Teaching Assistant of the year, awarded by UC Davis Computer Science Club, 2009.
- NUS Outstanding Undergraduate Researcher Award, 2007.
- Defense Science & Technology Agency Prize for the best student in Undergraduate Research Opportunities Program, 2007.
- Singapore Scholarship, awarded by Singapore Ministry of Foreign Affairs, 2003.

## PUBLICATIONS

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- Summary: 12 papers in tier-1 crypto conferences (Crypto, Eurocrypt, Asiacrypt)  
4 papers in tier-1 security conferences (CCS, S&P)  
2 papers in other venues (PKC, STACS)
1. Wei Dai, Viet Tung Hoang, and Stefano Tessaro. “Information-theoretic Indistinguishability via the Chi-Squared Method”, to appear in *CRYPTO 2017*.
  2. Viet Tung Hoang and Stefano Tessaro. “The Multi-User Security of Double Encryption”, *Advances in Cryptology — EUROCRYPT 2017*, pp. 381–411, 2017.
  3. Viet Tung Hoang, Jonathan Katz, Adam O’Neill, and Mohammad Zaheri. “Selective-Opening Security in the Presence of Randomness Failures”, *Advances in Cryptology — Asiacrypt 2016*, pp. 278–306, 2016. (Acceptance rate: 25%)
  4. Mihir Bellare, Viet Tung Hoang, and Stefano Tessaro. “Message-recovery attacks on Feistel-based Format Preserving Encryption”, *ACM Computer and Communications Security (CCS 2016)*, pp. 444–455, 2016. (Acceptance rate: 16.5%)
  5. Viet Tung Hoang and Stefano Tessaro. “Key-alternating Ciphers and Key-length Extension: Exact Bounds and Multi-user Security”, *Advances in Cryptology — CRYPTO 2016*, pp. 3–32, 2016. (Acceptance rate: 28%) **Invited to Journal of Cryptology.**
  6. Viet Tung Hoang, Jonathan Katz, and Alex Malozemoff. “Automated analysis and synthesis of authenticated encryption schemes”, *ACM Computer and Communications Security (CCS 2015)*, pp. 84–95, 2015. (Acceptance rate: 20%) **Best Paper Award.**
  7. Viet Tung Hoang, Reza Reyhanitabar, Phillip Rogaway, and Damian Vizár. “Online Authenticated-Encryption and its Nonce-Reuse Misuse-Resistance”, *Advances in Cryptology — CRYPTO 2015*, pp. 493–517, 2015. (Acceptance rate: 28%)
  8. Mihir Bellare and Viet Tung Hoang. “Resisting randomness subversion: Fast deterministic and hedged public-key encryption in the standard model”, *Advances in Cryptology — EUROCRYPT 2015*, pp. 627–656, 2015. (Acceptance rate: 29%)
  9. Viet Tung Hoang, Ted Krovetz, and Phillip Rogaway. “Robust authenticated-encryption: AEZ and the problem that it solves”, *Advances in Cryptology — EUROCRYPT 2015*, pp. 15–44, 2015. (Acceptance rate: 29%) **Best Paper Honorable Mention; Invited to Journal of Cryptology.**
  10. Mihir Bellare and Viet Tung Hoang. “Adaptive witness encryption and asymmetric password-based cryptography”, *Public Key Cryptography — PKC 2015*, pp. 308–331, 2015. (Acceptance rate: 28%)
  11. Mihir Bellare, Viet Tung Hoang, and Sriram Keelveedhi. “Cryptography from compression functions: The UCE bridge to the ROM”, *Advances in Cryptology — CRYPTO 2014*, pp. 169–187, 2014. (Acceptance rate: 26%)
  12. Mihir Bellare, Viet Tung Hoang, and Sriram Keelveedhi. “Instantiating random oracles via UCEs”. In *Advances in Cryptology — CRYPTO 2013*, pp. 398–415, 2013. (Acceptance rate: 27%) **Invited to Journal of Cryptology.**
  13. Mihir Bellare, Viet Tung Hoang, Sriram Keelveedhi, and Phillip Rogaway. “Efficient garbling from a fixed-key blockcipher”. In *IEEE Symposium of Security and Privacy 2013*, pp. 478–492, 2013. (Acceptance rate: 12%)
  14. Mihir Bellare, Viet Tung Hoang, and Phillip Rogaway. “Adaptive secure garbling with applications to one-time programs and secure outsourcing”. In *Advances in Cryptology — ASIACRYPT 2012*, pp. 134–153, 2012. (Acceptance rate: 17%)
  15. Mihir Bellare, Viet Tung Hoang, and Phillip Rogaway. “Foundations of garbled circuits”. In *ACM Computer and Communications Security (CCS 2012)*, pp. 784–796, 2012. (Acceptance rate: 19%)
  16. Viet Tung Hoang, Ben Morris, and Phillip Rogaway. “An enciphering scheme based on a card shuffle”. In *Advances in Cryptology — CRYPTO 2012*, pp. 1–13, 2012. (Acceptance rate: 21%)

17. Viet Tung Hoang and Phillip Rogaway. “On generalized Feistel networks”. In *Advances in Cryptology — CRYPTO 2010*, pp. 613-630, 2010. (Acceptance rate: 19%)
18. Viet Tung Hoang and Wing-Kin Sung. “Improved algorithms for maximum agreement and compatible supertrees”. *Algorithmica*, volume 59, number 2, pp. 195-214, 2011. (Journal version of [19])
19. Viet Tung Hoang and Wing-Kin Sung. “Fixed parameter polynomial time algorithms for maximum agreement and compatible supertrees”. In *Symposium of Theoretical Aspects of Computer Science (STACS 2008)*, pp. 361–372, 2008. (Acceptance rate: 27%)

## TALKS

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1. **The Multi-User Security of Double Encryption.**  
Conference talk at EUROCRYPT 2017, Paris, France. May 2017.
2. **Key-alternating Ciphers and Key-length Extension: Exact Bounds and Multi-user Security.**  
Conference talk at CRYPTO 2016, Santa Barbara, CA, USA. August 2016.
3. **Rethinking cryptographic designs: The case of authenticated encryption.**
  - University of Georgia, Athens, GA, March 2016.
  - North Carolina State University, Raleigh, NC, February 2016.
  - UC Riverside, Riverside, CA, February 2016.
  - Florida State University, Tallahassee, FL, February 2016.
4. **Robust authenticated-encryption: AEZ and the problem that it solves.**  
Conference talk at EUROCRYPT 2015, Sofia, Bulgaria. April 2015.
5. **Resisting randomness subversion: Fast deterministic and hedged public-key encryption in the standard model.**  
Conference talk at EUROCRYPT 2015, Sofia, Bulgaria. April 2015.
6. **Adaptive witness encryption and asymmetric password-based cryptography.**  
Conference talk at PKC 2015, Washington DC. March 2015.
7. **Practice-oriented cryptography: A definition-centric approach.**
  - George Mason University, Fairfax, MD. April 2015.
  - University of Waterloo, Waterloo, Canada. March 2015.
  - Simon Fraser University, Burnaby, Canada. March 2015.
  - Drexel University, Philadelphia, PA. February 2015.
8. **Cryptography from compression functions: The UCE bridge to the ROM.**  
Conference talk at CRYPTO 2014, Santa Barbara, CA. August 2014.
9. **Efficient garbling from a fixed-key blockcipher.**
  - Workshop on Applied Multiparty Computation, Microsoft Research Redmond, Seattle, WA. February 2014.
  - Conference talk at IEEE Security & Privacy 2013, San Francisco, CA. May 2013.
10. **Adaptive secure garbling with applications to one-time programs and secure outsourcing.**  
Conference talk at ASIACRYPT 2012, Beijing, China. December 2012.
11. **Foundations of garbled circuits.**  
Conference talk at ACM CCS 2012, Raleigh, NC. October 2012.
12. **On generalized Feistel networks.**  
Conference talk at CRYPTO 2010, Santa Barbara, CA, August 2010.

## FUNDING

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- “Data insurance in the cluster environment”. PI: Zhi Wang, co-PIs: Viet Tung Hoang, Paul Van Der Mark, and Xin Yuan. **\$590,317**, 2017–2020. NSF CICI 1738912.
- “Revising cryptographic proof techniques for exact security”. PI: Viet Tung Hoang. **\$20,000** for Summer 2017. First Year Assistant Professor Award, Florida State University.

## SERVICE

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- PC member for IWSEC 2016, ASIACRYPT 2016 & 2017, CCS 2016, and CRYPTO 2017.
- Reviewer for ASIACRYPT 2009, 2013–2015, CRYPTO 2011–2016, TCC 2012, EUROCRYPT 2013, 2016 & 2017, ICALP 2014, ACM CCS 2014 & 2015, STOC 2015, PKC 2016, IEEE Transactions on Dependable and Secure Computing, Information and Computation, IET Information Security.

## EMPLOYMENT HISTORY

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- **Assistant Professor**, Florida State University, 8/2016 – Present
- **Postdoctoral Scholar**, UC Santa Barbara, 2015 – 2016  
Host: Prof. Stefano Tessaro
- **Postdoctoral Scholar**, University of Maryland & Georgetown University, 2014 – 2015  
Hosts: Prof. Jonathan Katz and Prof. Adam O’Neill.
- **Postdoctoral Scholar**, UC San Diego, 2013 – 2014  
Host: Prof. Mihir Bellare.
- **Research Assistant**, UC Davis, 2009 – 2013.  
Advisor: Prof. Phillip Rogaway.
- **Research Specialist**, Genome Institute of Singapore, 2007 – 2008.
- **Student Researcher**, NUS, 2006 – 2007.  
Advisor: Prof. Wing-Kin Sung.
- **Student Researcher**, NUS, 2005 – 2006.  
Advisors: Prof. Akkihebbal Ananda and Prof. Mun-Choon Chan.

## TEACHING EXPERIENCE

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- **Instructor**. CIS5930: Special Topics in Cryptography, Spring 2017, graduate course at FSU.
- **Instructor**. COP4531: Complexity and Analysis of Data Structures and Algorithms, Fall 2016, undergraduate course at FSU.
- **Teaching Assistant**. ECS189A: Special Topics in Computer Science—Crypto, Spring 2011, undergraduate course at UC Davis.
- **Teaching Assistant**. ECS120: Introduction to Theory of Computation, Spring 2009, undergraduate course at UC Davis.
- **Teaching Assistant**. ECS20: Discrete Mathematics for Computer Science, Fall 2008 & Winter 2009, undergraduate course at UC Davis.
- **Undergraduate Teaching Assistant**. CS1101C: Programming Methodology with C, Fall 2006, undergraduate course at NUS.