

# Chung-Wei Lin

Assistant Professor  
cwlin@csie.ntu.edu.tw  
<https://www.csie.ntu.edu.tw/~cwlin/>  
+886-2-3366-4888

Department of Computer Science and Information Engineering  
Graduate Institute of Networking and Multimedia  
National Taiwan University  
No. 1, Sec. 4, Roosevelt Rd., Taipei 10617, Taiwan

## RESEARCH

Cyber-Physical Systems, Connected and Autonomous Vehicles, Security, System Design Methodology, Model-Based Design

## EDUCATION

Ph.D. (2015), Department of Electrical Engineering and Computer Sciences, University of California, Berkeley

- Advisor: Alberto L. Sangiovanni-Vincentelli
- GPA: 4.00/4.00

M.S. (2007), Graduate Institute of Electronics Engineering, National Taiwan University

- Advisor: Yao-Wen Chang
- GPA: 4.00/4.00 or 93.14 (100-point scale); Rank: 3rd (among 132 students)

B.S. (2005), Department of Computer Science and Information Engineering, National Taiwan University

- GPA: 4.00/4.00 or 92.02 (100-point scale); Rank: 2nd (among 108 students)

## PUBLICATIONS

### Journal Papers

1. **C.-W. Lin**, B. Kim, and S. Shiraishi, “Hardware virtualization and task allocation for plug-and-play automotive systems,” accepted and to appear in *IEEE Design & Test (D&T)*.
2. B. Zheng, **C.-W. Lin**, S. Shiraishi, and Q. Zhu, “Design and analysis of delay-tolerant intelligent intersection management,” accepted and to appear in *ACM Transactions on Cyber-Physical Systems (TCPS)*.
3. M. Sayin, **C.-W. Lin**, S. Shiraishi, J. Shen, and T. Başar, “Information-driven intersection control with incentive mechanism,” in *IEEE Transactions on Intelligent Transportation Systems (T-ITS)*, vol. 20, no. 3, pp. 912–924, Mar. 2019.
4. C. Liu, **C.-W. Lin**, S. Shiraishi, and M. Tomizuka, “Distributed conflict resolution for connected autonomous vehicles,” in *IEEE Transactions on Intelligent Vehicles (T-IV)*, vol. 3, no. 1, pp. 18–29, Mar. 2018.
5. T.-Y. Huang, C.-J. Chang, **C.-W. Lin**, S. Roy, and T.-Y. Ho, “Delay-bounded intra-vehicle network routing algorithm for minimization of wiring weight and wireless transmit power,” in *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD)*, vol. 36, no. 4, pp. 551–561, Apr. 2017.
6. H. Yu, **C.-W. Lin**, and B. Kim, “Automotive software certification: current status and challenges,” in *SAE International Journal of Passenger Cars—Electronic and Electrical Systems*, vol. 9, no. 1, pp. 74–80, May. 2016.
7. **C.-W. Lin**, B. Zheng, Q. Zhu, and A. Sangiovanni-Vincentelli, “Security-aware design methodology and optimization for automotive systems,” in *ACM Transactions on Design Automation of Electronic Systems (TODAES)*, vol. 21, no. 1, pp. 18:1–18:26, Dec. 2015. **(2016 Best Paper Award)**
8. **C.-W. Lin**, L. Rao, P. Giusto, J. D’Ambrosio, and A. Sangiovanni-Vincentelli, “Efficient wire routing and wire sizing for weight minimization of automotive systems,” in *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD)*, vol. 34, no. 11, pp. 1730–1741, Nov. 2015.

9. **C.-W. Lin**, Q. Zhu, and A. Sangiovanni-Vincentelli, “Security-aware modeling and efficient mapping for CAN-based real-time distributed automotive systems,” in *IEEE Embedded Systems Letters (ESL)*, vol. 7, no. 1, pp. 11–14, Mar. 2015. (**2015 Most Accessed ESL Paper**)
10. **C.-W. Lin**, L. Rao, J. D’Ambrosio, and A. Sangiovanni-Vincentelli, “Electrical architecture optimization and selection—cost minimization via wire routing and wire sizing,” in *SAE International Journal of Passenger Cars—Electronic and Electrical Systems*, vol. 7, no. 2, pp. 502–509, Aug. 2014.
11. **C.-W. Lin** and A. Sangiovanni-Vincentelli, “Cyber-security for the Controller Area Network (CAN) communication protocol,” in *ASE Science Journal*, vol. 1, no. 2, pp. 80–92, Dec. 2012.
12. **C.-W. Lin**, P.-W. Lee, Y.-W. Chang, C.-F. Shen, and W.-C. Tseng, “An efficient pre-assignment routing algorithm for flip-chip designs,” in *IEEE Transactions Computer-Aided Design (TCAD)*, Vol. 31, No. 6, pp. 878–889, Jun. 2012.
13. **C.-W. Lin**, S.-L. Huang, K.-C. Hsu, M.-X. Lee, and Y.-W. Chang, “Multi-layer obstacle-avoiding rectilinear Steiner tree construction based on spanning graphs,” in *IEEE Transactions Computer-Aided Design (TCAD)*, Vol. 27, No. 11, pp. 2007–2016, Nov. 2008.
14. C.-H. Liu, H.-Y. Liu, **C.-W. Lin**, S.-J. Chou, Y.-W. Chang, S.-Y. Kuo, and S.-Y. Yuan, “An efficient graph-based algorithm for ESD current path analysis,” in *IEEE Transactions Computer-Aided Design (TCAD)*, Vol. 27, No. 8, pp. 1363–1375, Aug. 2008.
15. **C.-W. Lin**, S.-Y. Chen, C.-F. Lee, Y.-W. Chang, and C.-L. Yang, “Obstacle-avoiding rectilinear Steiner tree construction based on spanning graphs,” in *IEEE Transactions Computer-Aided Design (TCAD)*, Vol. 27, No. 4, pp. 643–653, Apr. 2008.

## Conference Papers

1. T.-W. Huang, Y.-Y. Tsai, **C.-W. Lin**, and T.-Y. Ho, “Vehicle sequence reordering with cooperative adaptive cruise control,” accepted and to appear in *ACM/IEEE Design Automation and Test in Europe (DATE)*, Florence, Italy, Mar. 2019.
2. S. Raghavan, K. Watanabe, E. Kang, **C.-W. Lin**, Z. Jiang, and S. Shiraishi, “Property-driven runtime resolution of feature interactions,” in *International Conference on Runtime Verification (RV)*, pp. 316–333, Limassol, Cyprus, Nov. 2018.
3. H. Liang, M. Jagielski, B. Zheng, **C.-W. Lin**, E. Kang, S. Shiraishi, C. Nita-Rotaru, and Q. Zhu, (Invited) “Network and system level security in connected vehicle applications,” in *IEEE/ACM International Conference on Computer-Aided Design (ICCAD)*, pp. 94:1–94:7, San Diego, CA, Nov. 2018.
4. B. Kim, **C.-W. Lin**, E. Kang, N. Tomatsu, and S. Shiraishi, “Platform-independent QoS parameters and primitive APIs for automotive software,” in *IEEE International Conference on Intelligent Transportation Systems (ITSC)*, pp. 98–104, Maui, HI, Nov. 2018.
5. I. Incer, A. Sangiovanni-Vincentelli, **C.-W. Lin**, and E. Kang, “Quotient for assume-guarantee contracts,” in *ACM/IEEE International Conference on Formal Methods and Models for System Design (MEMOCODE)*, Beijing, China, Oct. 2018.
6. T. Chowdhury, E. Lesiuta, K. Rikley, **C.-W. Lin**, E. Kang, B. Kim, S. Shiraishi, M. Lawford, and A. Wasssyng, “Safe and secure automotive over the air updates,” in *International Conference on Computer Safety, Reliability, and Security (SAFECOMP)*, pp. 172–187, Västerås, Sweden, Sep. 2018.
7. D. Gangadharan, O. Sokolsky, I. Lee, B. Kim, **C.-W. Lin**, and S. Shiraishi, “Bandwidth optimal data/service delivery for connected vehicles via edges,” in *IEEE International Conference on Cloud Computing (CLOUD)*, pp. 106–113, San Francisco, CA, Jul. 2018.
8. M. Sayin, **C.-W. Lin**, S. Shiraishi, and T. Başar, “Reliable intersection control in non-cooperative environments,” in *AACC/IEEE American Control Conference (ACC)*, pp. 609–614, Milwaukee, WI, Jun. 2018.
9. C. Liu, **C.-W. Lin**, S. Shiraishi, and M. Tomizuka, “Improving efficiency of autonomous vehicles by V2V communication,” in *AACC/IEEE American Control Conference (ACC)*, pp. 4778–4783, Milwaukee, WI, Jun. 2018.
10. K. Watanabe, E. Kang, **C.-W. Lin**, and S. Shiraishi, (Invited) “Runtime monitoring for safety of intelligent vehicles,” in *ACM/IEEE Design Automation Conference (DAC)*, pp. 31:1–31:6, San Francisco, CA, Jun. 2018.

11. M. Jagielski, N. Jones, **C.-W. Lin**, C. Nita-Rotaru, and S. Shiraishi, “Threat detection for collaborative adaptive cruise control in connected cars,” in *ACM Conference on Security and Privacy in Wireless and Mobile Networks (WiSec)*, pp. 184–189, Stockholm, Sweden, Jun. 2018.
12. T. Liu, J. Li, B. Kim, **C.-W. Lin**, S. Shiraishi, J. Xie, and Z. Han, “Distributed file allocation using matching game in mobile fog-caching service network,” in *IEEE INFOCOM Workshop on Integrating Edge Computing, Caching, and Offloading in Next Generation Networks (IECCO)*, pp. 499–504, Honolulu, HI, Apr. 2018.
13. B. Zheng, M. Sayin, **C.-W. Lin**, S. Shiraishi, and Q. Zhu, (Invited) “Timing and security analysis of VANET-based intelligent transportation systems,” in *IEEE/ACM International Conference on Computer-Aided Design (ICCAD)*, pp. 984–991, Irvine, CA, Nov. 2017.
14. T. Chowdhury, **C.-W. Lin**, B. Kim, M. Lawford, S. Shiraishi, and A. Wassyn, “Principles for systematic development of an assurance case template from ISO 26262,” in *Proceedings of IEEE International Symposium on Software Reliability Engineering Workshops (ISSREW)*, pp. 69–72, Toulouse, France, Oct. 2017.
15. W. Zuo, L.-N. Pouchet, A. Ayupov, T. Kim, **C.-W. Lin**, S. Shiraishi, and D. Chen, “Accurate high-level modeling and automated hardware/software co-design for effective SoC design space exploration,” in *ACM/IEEE Design Automation Conference (DAC)*, pp. 78:1–78:6, Austin, TX, Jun. 2017.
16. B. Zheng, **C.-W. Lin**, H. Liang, S. Shiraishi, W. Li, and Q. Zhu, (Invited) “Delay-aware design, analysis and verification of intelligent intersection management,” in *IEEE International Conference on Smart Computing (SMARTCOMP)*, pp. 1–8, Hong Kong, China, May. 2017.
17. B. Aygun, **C.-W. Lin**, S. Shiraishi, and A. Wyglinski, “Selective message relaying for multi-hopping vehicular networks,” in *IEEE Vehicular Networking Conference (VNC)*, pp. 1–8, Columbus, OH, Dec. 2016.
18. B. Zheng, **C.-W. Lin**, H. Yu, H. Liang, and Q. Zhu, (Invited) “CONVINCE: A cross-layer modeling, exploration and validation framework for next-generation connected vehicles,” in *IEEE/ACM International Conference on Computer-Aided Design (ICCAD)*, pp. 37:1–37:8, Austin, TX, Nov. 2016.
19. **C.-W. Lin**, S. Shiraishi, and B. Kim, “An Amanat-based multi-party certification protocol for outsourced software in automotive systems,” in *Proceedings of IEEE International Symposium on Software Reliability Engineering Workshops (ISSREW)*, pp. 13–16, Ottawa, Canada, Oct. 2016.
20. P. Joshi, V. Ganesan, H. Zeng, S. Shukla, **C.-W. Lin**, and H. Yu, (Invited) “Design space exploration for deterministic Ethernet-based architecture of automotive systems,” in *Proceedings of IEEE International High-Level Design Validation and Test Workshop (HLDVT)*, pp. 53–61, Santa Cruz, CA, Oct. 2016.
21. D. Gangadharan, O. Sokolsky, J. H. Kim, B. Kim, **C.-W. Lin**, S. Shiraishi, and I. Lee, (Invited) “Platform-based plug and play of automotive safety features—challenges and directions,” in *IEEE International Conference on Embedded and Real-Time Computing Systems and Applications (RTCSA)*, pp. 76–84, Daegu, Korea, Aug. 2016.
22. B. Zheng, H. Liang, Q. Zhu, H. Yu, and **C.-W. Lin**, (Invited) “Next generation automotive architecture modeling and exploration for autonomous driving,” in *IEEE Computer Society Annual Symposium on VLSI (ISVLSI)*, pp. 53–58, Pittsburgh, PA, Jul. 2016.
23. **C.-W. Lin** and H. Yu, (Invited) “Cooperation or competition? Coexistence of safety and security in next-generation Ethernet-based automotive networks,” in *ACM/IEEE Design Automation Conference (DAC)*, pp. 52:1–52:6, Austin, TX, Jun. 2016.
24. D. Gangadharan, O. Sokolsky, I. Lee, B. Kim, **C.-W. Lin**, and S. Shiraishi, “Platform-based automotive safety features,” in *SAE World Congress & Exhibition*, Detroit, MI, Apr. 2016.
25. H. Yu, **C.-W. Lin**, and B. Kim, “Automotive software certification: current status and challenges,” in *SAE World Congress & Exhibition*, Detroit, MI, Apr. 2016.
26. H. Yu and **C.-W. Lin**, “Security concerns for automotive communication and software architecture,” in *IEEE INFOCOM Workshop on Cross-Layer Cyber-Physical Systems Security (CPSS)*, pp. 600–603, San Francisco, CA, Apr. 2016. (**Best Paper Award**)
27. T.-Y. Huang, C.-J. Chang, **C.-W. Lin**, S. Roy, and T.-Y. Ho, “Intra-vehicle network routing algorithm for weight and wireless transmit power minimization,” in *ACM/IEEE Asia South Pacific Design Automation Conference (ASP-DAC)*, pp. 273–278, Chiba/Tokyo, Japan, Jan. 2015. (**Best Paper Nominee**)

28. **C.-W. Lin**, Q. Zhu, and A. Sangiovanni-Vincentelli, “Security-aware mapping for TDMA-based real-time distributed systems,” in *IEEE/ACM International Conference on Computer-Aided Design (ICCAD)*, pp. 24–31, San Jose, CA, Nov. 2014.
29. **C.-W. Lin**, T.-H. Hsu, X.-W. Shih, and Y.-W. Chang, “Buffered clock tree synthesis considering self-heating effects,” in *ACM/IEEE International Symposium on Low Power Electronics and Design (ISLPED)*, pp. 111–116, La Jolla, CA, Aug. 2014.
30. **C.-W. Lin**, L. Rao, P. Giusto, J. D’Ambrosio, and A. Sangiovanni-Vincentelli, “An efficient wire routing and wire sizing algorithm for weight minimization of automotive systems,” in *ACM/IEEE Design Automation Conference (DAC)*, San Francisco, CA, Jun. 2014.
31. **C.-W. Lin**, L. Rao, J. D’Ambrosio, and A. Sangiovanni-Vincentelli, “Electrical architecture optimization and selection—cost minimization via wire routing and wire sizing,” in *SAE World Congress & Exhibition*, Detroit, MI, Apr. 2014.
32. **C.-W. Lin**, Q. Zhu, C. Phung, and A. Sangiovanni-Vincentelli, “Security-aware mapping for CAN-based real-time distributed automotive systems,” in *IEEE/ACM International Conference on Computer-Aided Design (ICCAD)*, San Jose, CA, Nov. 2013.
33. **C.-W. Lin**, M. Di Natale, H. Zeng, L. T. X. Phan, and A. Sangiovanni-Vincentelli, “Timing analysis of process graphs with finite communication buffers,” in *IEEE Real-Time and Embedded Technology and Applications Symposium (RTAS)*, pp. 227–236, Philadelphia, PA, Apr. 2013.
34. S.-Y. Fang, **C.-W. Lin**, G.-W. Liao, and Y.-W. Chang, “Simultaneous OPC- and CMP-aware routing based on accurate closed-form modeling,” in *ACM International Symposium on Physical Design (ISPD)*, pp. 77–84, Stateline, NV, Mar. 2013.
35. **C.-W. Lin** and A. Sangiovanni-Vincentelli, “Cyber-security for the Controller Area Network (CAN) communication protocol,” in *ASE International Conference on Cyber Security*, pp. 344–350, Washington, DC, Dec. 2012. (**Top 3% Paper**)
36. S.-L. Huang, **C.-W. Lin**, and Y.-W. Chang, “Efficient provably good OPC modeling and its applications to interconnect optimization,” in *IEEE International Conference on Computer Design (ICCD)*, pp. 336–341, Amsterdam, Netherlands, Oct. 2010. (**Best Paper Award**)
37. P.-W. Lee, **C.-W. Lin**, Y.-W. Chang, C.-F. Shen, and W.-C. Tseng, “An efficient pre-assignment routing algorithm for flip-chip designs,” in *IEEE/ACM International Conference on Computer-Aided Design (ICCAD)*, pp. 239–244, San Jose, CA, Nov. 2009.
38. **C.-W. Lin**, S.-L. Huang, K.-C. Hsu, M.-X. Lee, and Y.-W. Chang, “Efficient multi-layer obstacle-avoiding rectilinear Steiner tree construction,” in *IEEE/ACM International Conference on Computer-Aided Design (ICCAD)*, pp. 380–385, San Jose, CA, Nov. 2007.
39. **C.-W. Lin**, S.-Y. Chen, C.-F. Li, Y.-W. Chang, and C.-L. Yang, “Efficient obstacle-avoiding rectilinear Steiner tree construction,” in *ACM International Symposium on Physical Design (ISPD)*, pp. 127–134, Austin, TX, Mar. 2007. (**Best Paper Nominee**)
40. **C.-W. Lin**, M.-C. Tsai, K.-Y. Lee, T.-C. Chen, T.-C. Wang, and Y.-W. Chang, (Invited) “Recent research and emerging challenges in physical design for manufacturability/reliability,” in *ACM/IEEE Asia South Pacific Design Automation Conference (ASP-DAC)*, pp. 238–243, Yokohama, Japan, Jan. 2007.
41. H.-Y. Liu, **C.-W. Lin**, S.-J. Chou, W.-T. Tu, Y.-W. Chang, and S.-Y. Kuo, “Current path analysis for electrostatic discharge protection,” in *IEEE/ACM International Conference on Computer-Aided Design (ICCAD)*, pp. 510–515, San Jose, CA, Nov. 2006.
42. **C.-W. Lin**, Y.-C. Chen, and A.-C. Pang, “A new resource allocation scheme for IEEE 802.16-based networks,” in *IEEE VTS Asia Pacific Wireless Communications Symposium (APWCS)*, Daejeon, Korea, Aug. 2006.

## Poster and Extended Abstract

1. **C.-W. Lin**, “From electronic design automation to automotive design automation,” in *ACM International Symposium on Physical Design (ISPD)*, pp. 101–101, San Francisco, CA, Apr. 2019.
2. **C.-W. Lin**, “Formal QoS compatibility verification for components on Time-Sensitive Networking,” in *IEEE Vehicular Networking Conference (VNC)*, pp. 1–2, Taipei, Taiwan, Dec. 2018.

## Other Articles

1. **C.-W. Lin**, N. Arechiga, S. Dai, B. Kim, and S. Shiraishi, “Emerging research topics for intelligent and connected vehicles,” in *Newsletter of Technical Committee on Cyber-Physical Systems (TC-CPS)*, no. 3, pp. 9–13, Feb. 2017.
2. T.-Y. Huang, C.-J. Chang, **C.-W. Lin**, S. Roy, and T.-Y. Ho, “Intra-vehicle network routing algorithm for weight and wireless transmit power minimization,” in *Workshop on Synthesis and System Integration of Mixed Information Technologies (SASIMI)*, Yilan, Taiwan, Mar. 2015.
3. **C.-W. Lin**, M. Di Natale, H. Zeng, A. Sangiovanni-Vincentelli, “Performance analysis of synchronous models implementations on loosely time-triggered architectures,” in *Work-in-Progress Session of IEEE Real-Time and Embedded Technology and Applications Symposium (RTAS)*, Chicago, IL, Apr. 2011.
4. P.-W. Lee, **C.-W. Lin**, and Y.-W. Chang, “Fast pre-assignment flip-chip routing,” in *VLSI Design/CAD Symposium*, Hua-Lien, Taiwan, Aug. 2009. (**Best Paper Nominee**)

## Book

1. **C.-W. Lin** and A. Sangiovanni-Vincentelli, “Security-aware design for cyber-physical systems: a platform-based approach,” Springer, Jan. 2017.

## Patents

1. B. Kim, **C.-W. Lin**, and S. Shiraishi, “Selective remote control of ADAS functionality of vehicle,” US Patent 10,203,699, Feb. 2019.
2. S. Shiraishi, M. Yamaura, and **C.-W. Lin**, “User profile-based automatic parameter tuning system for connected vehicles,” US Patent 10,202,127 (JP Patent No. 6,428,835), Feb. 2019.
3. **C.-W. Lin**, H. Yu, and B. Zheng, “Supervising method for dynamic and large data loads in automotive systems,” US Patent 10,124,779, Nov. 2018.
4. H. Yu, B. Zheng, and **C.-W. Lin**, “Compatibility module to support an automotive system upgrade,” US Patent 10,001,988, Jun. 2018.
5. B. Kim, **C.-W. Lin**, and S. Shiraishi, “Personalized medical emergency autopilot system based on portable medical device data,” US Patent 9,932,041, Apr. 2018.
6. C.-F. Chang, C.-F. Shen, H.-S. Chiu, I.-J. Lin, T.-C. Hsu, Y.-W. Chang, **C.-W. Lin**, and P.-W. Lee, “Routing method for flip chip package and apparatus using the same metal layer,” US Patent 8,578,317, Oct. 2010.

## Talks

1. **C.-W. Lin**, “Design and analysis for connected and autonomous vehicles,” Department of Electrical Engineering, National Chung Cheng University, Apr. 2019.
2. **C.-W. Lin**, “Design and analysis for connected and autonomous vehicles,” Institute of Communications Engineering, National Tsing Hua University, Mar. 2019.
3. **C.-W. Lin**, “Technology and challenges of intelligent vehicles,” Cathay Financial Holdings Co., Ltd., Mar. 2019.
4. **C.-W. Lin**, “Recent research in design and analysis for intelligent vehicles,” Computer Engineering and Systems Group (CESG) Fishbowl Seminar, Texas A&M University, Jan. 2019.
5. **C.-W. Lin**, “Recent research in design and analysis for intelligent vehicles,” Intelligent Transportation Creative Idea Competition, National Chiao Tung University, Jan. 2019.
6. **C.-W. Lin**, “Vehicle functional safety certification and technology having potential impacts on laws and regulations,” MOST Joint Research Center for AI Technology and All Vista Healthcare, Nov. 2018.
7. **C.-W. Lin**, “Recent research in design and analysis for intelligent vehicles,” Institute of Information Science, Academia Sinica, Nov. 2018.
8. **C.-W. Lin**, “Recent research in design and analysis for intelligent vehicles,” Department of Computer Science and Information Engineering, National Taipei University, Oct. 2018.

9. **C.-W. Lin**, “General design approaches for intelligent vehicles and medical devices,” Integrated Medical Database, National Taiwan University Hospital, Oct. 2018.
10. **C.-W. Lin**, “Security and robustness of connected and autonomous vehicles,” NTU IoX Center, National Taiwan University, Oct. 2018.
11. **C.-W. Lin**, “Security of connected and autonomous vehicles,” Department of Computer Science and Information Engineering, National Taiwan University, Oct. 2018.
12. **C.-W. Lin**, “From electronic design automation to automotive design automation,” EDA Camp, Graduate Institute of Electronics Engineering, National Taiwan University, Aug. 2018.
13. **C.-W. Lin**, “Recent research and emerging challenges in design automation for connected and autonomous vehicles,” IEEE International Workshop on Design Automation for Cyber-Physical Systems (DACPS), Jun. 2018.
14. **C.-W. Lin**, “Innovative design and analysis for intelligent and connected vehicles,” Computer Science and Artificial Intelligence Laboratory, Massachusetts Institute of Technology, May. 2018.
15. **C.-W. Lin**, “Innovative design and analysis for intelligent and connected vehicles,” Department of Electrical Engineering and Computer Science, Northwestern University, Feb. 2018.
16. **C.-W. Lin**, “Innovative design and analysis for intelligent and connected vehicles,” Department of Computer Science, Columbia University, Jan. 2018.
17. **C.-W. Lin**, “Innovative design and analysis for intelligent and connected vehicles,” Graduate Institute of Electronics Engineering, National Taiwan University, Dec. 2017.
18. **C.-W. Lin**, “Innovative design and analysis for intelligent and connected vehicles,” Department of Computer Science and Information Engineering, National Taiwan University, Dec. 2017.
19. **C.-W. Lin**, “Innovative design and analysis for intelligent and connected vehicles,” Department of Communications and Computer Engineering, Kyoto University, Dec. 2017.
20. **C.-W. Lin**, “Innovative design and analysis for intelligent and connected vehicles,” Department of Computer Science, University of Illinois at Urbana-Champaign, Nov. 2017.
21. **C.-W. Lin**, “Innovative design and analysis for intelligent and connected vehicles,” Coordinated Science Laboratory, University of Illinois at Urbana-Champaign, Oct. 2017.
22. **C.-W. Lin**, “Design framework and evolutionary architecture for next-generation connected vehicles,” Department of Electrical and Computer Engineering, University of California, Riverside, May. 2017.
23. **C.-W. Lin**, “Design framework and evolutionary architecture for next-generation connected vehicles,” College of Computer and Information Science, Northeastern University, Feb. 2017.
24. **C.-W. Lin**, “Design framework and evolutionary architecture for next-generation connected vehicles,” School of Engineering and Applied Science, University of Pennsylvania, Feb. 2017.
25. **C.-W. Lin**, “Design framework and evolutionary architecture for next-generation connected vehicles,” ECE Seminar, Boston University, Oct. 2016.
26. **C.-W. Lin**, “In-vehicle network design for security and plug-and-play,” Center for Embedded Systems for Critical Applications (CESCA) Seminar, Virginia Polytechnic Institute and State University, Feb. 2016.
27. **C.-W. Lin**, “Introduction to in-vehicle networks—security and plug-and-play,” EECS, University of California, Berkeley, Jan. 2016. (Guest Lecture, Embedded System Design: Modeling, Analysis, and Synthesis)
28. **C.-W. Lin**, “Design for security,” UTC Institute for Advanced Systems Engineering, University of Connecticut, Oct. 2015. (Guest Lecture, Design Flows for Embedded/Networked Systems)
29. **C.-W. Lin**, “Security-aware design for real-time distributed cyber-physical systems,” Intel-NTU Connected Context Computing Center, National Taiwan University, Sep. 2015.
30. **C.-W. Lin**, “Security-aware design for real-time distributed cyber-physical systems,” Department of Electrical and Computer Engineering, University of Utah, Feb. 2015.

31. **C.-W. Lin**, “Security-aware mapping for real-time distributed embedded systems,” STARnet e-Workshop, Semiconductor Research Corporation, Apr. 2014.
32. **C.-W. Lin**, A. Sangiovanni-Vincentelli, and S. Seshia, “Design and analysis for security,” TerraSwarm Annual Review, TerraSwarm Research Center, Nov. 2013.
33. **C.-W. Lin**, “Security mechanisms and security-aware mapping for real-time distributed automotive systems,” Secure Computing Research for Users’ Benefit (SCRUB) Seminar, University of California, Berkeley, Oct. 2013.
34. **C.-W. Lin**, “Cyber-security for Controller Area Network and its security-aware mapping,” Design of Robotics and Embedded Systems, Analysis, and Modeling Seminar (DREAMS), University of California, Berkeley, Sep. 2013.

## Theses

1. **C.-W. Lin**, “Security mechanisms and security-aware mapping for real-time distributed embedded systems,” Ph.D. Thesis, University of California, Berkeley, Aug. 2015.
2. **C.-W. Lin**, “Efficient obstacle-avoiding rectilinear Steiner tree construction,” M.S. Thesis, National Taiwan University, Jun. 2007.

## GROUP MEMBERS

Ph.D. Student: Cheng-Yuan Zeng

2020-Class M.S. Students: Sing-Yao Wu, Ching-Chin Hung, Chia-Ching Fu

2021-Class M.S. Students: Ssu-Tsen Hou, Kuan-Chun Wang, Kai-Chieh Chang, Yen-Ta Lin, Da Lai, Li-Yeou Wang

Senior Students: Po-Jui Chang (NTU ME), Chia-Chu Kung (NTU CE), Tzu-Shen Wang, Chia-Ho Wu

Junior Students: Pin-Yen Huang, Che-An Wu, Yu-Wen Chen

Sophomore Students: Yi-Hung Lai, Chen Lin, Shih-Lun Wu, Tsung-Lin Tsou

## TEACHING

CSIE2344: Digital Systems Design and Laboratory, NTU

Spring 2019

CSIE5452: Introduction to Intelligent Vehicles, NTU

Fall 2018

CS70: Discrete Mathematics and Probability Theory, UC Berkeley

Summer 2015

- **Teach ~300 Students and Lead 11 TAs and 14 Readers**

- **Student Evaluation = 6.2/7.0**

## EXPERIENCES

Researcher, Systems and Software Division, Toyota InfoTechnology Center, USA, Inc.

2015.09–2018.07

Graduate Student Instructor, Discrete Mathematics and Probability Theory, UC Berkeley

2015.06–2015.08

Graduate Student Instructor (TA), Discrete Mathematics and Probability Theory, UC Berkeley

2014.01–2014.05

- **Student Evaluation = 4.9/5.0**

Summer Intern, General Motors

2013.05–2013.08

Graduate Student Instructor (TA), Discrete Mathematics and Probability Theory, UC Berkeley

2013.01–2013.05

- **Student Evaluation = 4.7/5.0**

Summer Intern, General Motors

2012.05–2012.08

Summer Intern, General Motors

2011.05–2011.08

Research Assistant (Joint Project with Synopsys Taiwan), NTU

2009.02–2009.07

Military Instructor in Information System (Second Lieutenant), R.O.C. Army

2007.11–2008.06

Compulsory Military Service, R.O.C. Army

2007.07–2008.06

Research Assistant (Joint Project with Taiwan Semiconductor Manufacturing Company), NTU

2006.05–2007.06

Teaching Assistant, Nonlinear Programming, NTU

2007.02–2007.06

Teaching Assistant, Logic Synthesis and Verification, NTU

2006.09–2007.01

## HONORS

Best Paper Award, ACM Transactions on Design Automation of Electronic Systems	2016.06
Best Paper Award, IEEE INFOCOM Workshop on Cross-Layer Cyber-Physical Systems Security	2016.04
Outstanding Graduate Student Instructor Award, UC Berkeley	2015.05
Best Paper Award, IEEE International Conference on Computer Design	2010.10
EECS Department Fellowship, EECS, UC Berkeley	2009.08
The Best M.S. Thesis Award, Graduate Institute of Electronics Engineering, NTU	2007.12
The 1st Prize, Youth Thesis Award, Chinese Institute of Electrical Engineering	2007.12
The 1st Prize, IC/CAD Contest, Ministry of Education, Taiwan	2007.07
Member of Phi-Tau-Phi Scholastic Honor Society (Top 3% Students)	2007.06
Two-Time EDA Scholarship, SpringSoft Education Foundation	2007.07, 2006.07
Incentia Scholarship (Rank 1st in Program Entrance of EDA Group)	2005.09
Member of Phi-Tau-Phi Scholastic Honor Society (Top 1% Students)	2005.06
Six-Time Presidential Award (Top 5% Students), NTU	2005.04, etc.
Two-Time Champion, Tennis Team Competition (Division II), National College Games	2006.04, 2004.03

## SERVICES

Automotive Committee Member, ACM/IEEE Design Automation Conference (DAC)	2017
TPC Member, ACM/IEEE Design Automation Conference (DAC)	2019, 2018, 2017
TPC Member (Track Chair), International Conference on Omni-layer Intelligent Systems (COINS)	2019
TPC Member, IEEE Vehicular Technology Conference (VTC-Spring)	2019
TPC Member, ACM Workshop on Automotive Cybersecurity (AutoSec),	2019
TPC Member, ACM/IEEE Asia South Pacific Design Automation Conference (ASP-DAC)	2019, 2016
TPC Member, IEEE International Symposium on Smart Electronic Systems (iSES)	2018
TPC Member, IEEE Conference on Dependable and Secure Computing (DSC)	2018
TPC Member, IEEE Vehicular Networking Conference (VNC)	2018
TPC Member, IEEE International Symposium on Industrial Embedded Systems (SIES)	2018, 2017, 2016
TPC Member, IEEE International Symposium on Nanoelectronic and Information Systems (iNIS)	2017, 2016, 2015
TPC Member, IEEE International Conference on Embedded Software and Systems (ICCESS)	2016, 2015
Journal Reviewer, ACM JETC/TCPS/TECS/TODAES	
Journal Reviewer, IEEE CEM/ESL/IoT-J/PIEEE/T-IV/TAES/TC/TCAD/TII/TMC/TPDS/TVLSI/TVT	
Journal Reviewer, IEEE/ACM TNET	
Journal Reviewer, SAE JCAV	
Conference Reviewer, ACM e-Energy/GLSVLSI/ISPD/SAC	
Conference Reviewer, ACM/IEEE ASP-DAC/CODES+ISSS/DAC	
Conference Reviewer, IEEE ACC/CSCITA/FPT/IECON/INFOCOM/ITSC/RTAS/RTSS/SOCC/TENCON/VLSI-DAT	
Conference Reviewer, IEEE/ACM ICCAD	
Conference Reviewer, SAE WCX	

## ACTIVITIES

Member of Tennis Team, NTU	2002.09–2007.06
Chairman of EECS College Students Association, NTU	2003.07–2004.06