

Curriculum Vitae Jung-Min (Jerry) Park

Bradley Department of Electrical and Computer Engineering
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<http://www.bwac.wireless.vt.edu/index.html>

Education

2003	Purdue University	Ph.D. in Electrical & Computer Engineering (Co-advisors: Profs. Edwin K. P. Chong & H. J. Siegel)
1997	Yonsei University, South Korea	M.S. in Electronic Engineering
1995	Yonsei University, South Korea	B.S. in Electronic Engineering

Professional Appointments

May 2014–present	<i>Associate Director</i> , Wireless @ Virginia Tech Research Group
Apr. 2013–present	<i>Site Director</i> , NSF I/UCRC (Industry-University Cooperative Research Center): Broadband Wireless Access & Applications Center (BWAC)
Aug. 2009–present	<i>Associate Professor</i> (with tenure), Virginia Tech
Aug. 2003–Aug. 2009	<i>Assistant Professor</i> , Virginia Tech
May 2000–July 2000	<i>Intern Engineer</i> , Samsung Electronics Co.
May 1997–June 1998	<i>Cellular Systems Engineer</i> , Motorola Korea Inc.

Awards & Honors

2014	Virginia Tech College of Engineering Faculty Fellow Award *
2014	Best Paper Award from the 2014 IEEE International Symposium on Dynamic Spectrum Access Networks (DySPAN), April 2014.
2008	NSF Faculty Early Career Development (CAREER) Award
2008	Hoeber Excellence in Research Award (equivalent to a best paper award)
1998	AT&T Leadership Award (graduate school scholarship provided by the AT&T Foundation)
1995	Grand prize at the Undergraduate Student Thesis Competition

* *Award description: To acknowledge and reward tenure-track faculty in junior ranks who have shown exceptional merit in research, teaching and/or service. The intent of the award is "preemptive retention" of rising stars. These awards are primarily aimed at "up and coming" associate professors, although exceptionally talented assistant professors close to obtaining tenure may also be considered.*

Research Interests

Cognitive radio networks; spectrum sharing technologies; network security and privacy; wireless communications and networking; and applied cryptography.

External Research Support: Grants & Contracts

(The number inside the parentheses indicates credit percentage.)

PI (100%), "Collaborative Research: Coexistence of Heterogeneous Secondary Networks for Shared Spectrum Access," NSF, \$99,992, 8/15/14–8/31/16.

PI (30%), "LTE-Enhanced cognitive radio testbed," Army Research Office, \$250K, 7/1/14–6/30/15; co-PIs: C. B. Dietrich, V. Marojevic, and J. H. Reed.

PI (50%), "Collaborative Proposal: Broadband Wireless Access & Applications Center (BWAC)," NSF, \$300,000, 3/1/13–2/28/18; co-PI: Jeff Reed.

PI (60%), "TWC SBE: Medium: Collaborative: Dollars for Hertz: Making Trustworthy Spectrum Sharing Technically and Economically Viable," NSF, \$897,985, 8/1/13–7/31/17; co-PI: Patrick Schaumont; total grant budget: \$1.2M; collaboration with M. Connolly (Duke Univ.) and N. Sa (Vassar College).

PI (60%), "Ensuring Operational Privacy of Primary Users in Geolocation Database-Driven Spectrum Sharing," Motorola Solutions, Inc., \$374,948, 3/7/13–3/6/15; co-PI: Jeff Reed (40%).

PI (100%), "In situ sensing system for the selective and sensitive detection of biological toxins in HABs," Univ. of Texas at Arlington (National Institute of Health (NIH) and NSF flow through), \$142,576, 9/1/2012–8/31/2015; lead-PI: Hyeok Choi (@ Univ. of Texas at Arlington).

Co-PI (50%), "Cognitive radio development," Lockheed Martin (DARPA flow through), \$319,635, 7/1/2012–12/31/2013; PI: Richard M. Buehrer.

Co-PI (50%), "Outdoor cognitive radio network testbed," Office of Naval Research, \$260,399, 6/15/12–6/14/2013; PI: Jeff Reed.

Co-PI (10%), "Cyber Security I/UCRC," NSF, \$290,000, 7/1/11–6/30/16; PI: T. Charles Clancy; co-PIs: Joseph Tront, Michael Hsiao, Danfeng Yao.

Co-PI (50%), "Collaborative Research: Enhancing Access to the Radio Spectrum (EARS) Workshop," NSF, \$21,860, April 1, 2010–March 31, 2011; PI: Jeff Reed; Collaboration with Jennifer Bernhard (UIUC, PI).

Co-PI (25%), "TC: Large: Collaborative Research: Austin – An Initiative to Assure Software Radios Have Trusted Interactions," NSF, \$400,000, 9/1/09–8/31/11; PI: Jeff Reed, co-PIs: Tom Hou, Cameron Patterson.

Co-PI (33%), "Cryptographic API and Subsystem Simulator for Software Defined Radios," SCA Techniques Inc., \$50,000, 1/1/09–9/26/09; PI: Jeff Reed, co-PI: Tim Newman.

Co-PI (33%), "Proactive Cross-Layer Adversary Localization for Hostile or Harsh Wireless Environments," NSF, \$329,499, 6/1/08–5/31/11; PI: Yaling Yang, co-PI: Richard M. Buehrer.

PI (100%), "CAREER: Non-Conventional Solutions for Ensuring Security in Cognitive Radio Networks," NSF, \$430,000, 2/1/08–1/31/14.

PI (100%), REU Supplemental Funding for NSF CAREER Award, NSF, \$6,000, 2/1/08–1/31/14.

PI (40%), "Collaborative Research: CT-T: TRIESTE: A Trusted Radio Infrastructure for Enforcing Spectrum Etiquettes," NSF, \$50,000, Oct. 2007–Sep. 2008; co-PIs: Tom Hou and Jeff Reed.

PI (70%), "CT-ISG: Trustworthy Spectrum Sharing in Software Defined Radio Networks," NSF, \$400,000, 1/1/07–12/31/09; co-PIs: Tom Hou and Jeff Reed.

Co-PI (25%), "POCKET: A Technical and Behavioral Concept for Protecting Children's Online Privacy," NSF, \$449,999, 8/1/05–7/31/08; PI: Michael Hsiao, co-PIs: Janine Hiller, France Belanger.

External Research Support: Cash Gifts

- Zeta Associates, \$40K, Aug. 2014.
- Motorola Solutions, \$40K, May 2014.
- Office of Secretary of Defense (through NSF I/UCRC inter-agency agreement), \$327,187, Apr. 2014.
- L-3 Communications, \$40K, Jan. 2014.
- Northrop Grumman, \$40K, Dec. 2013.
- Zeta Associates, \$40K, Sep. 2013.
- Motorola Solutions, \$40K, May 2013.
- Electronics and Telecommunications Research Institute (ETRI), Korea, \$8K, July 2012.
- Korea Ministry of Education, Science and Technology, \$15K, Jan. 2012.
- L-3 Communications, \$20K, Nov. 2011.
- Korea Communications Commission, \$5K, Nov. 2011.
- Electronics and Telecommunications Research Institute (ETRI), Korea, \$12K, Aug. 2011.
- Samsung Electronics, \$4K, 2010.
- Samsung Electronics, \$4K, 2009.
- Telcordia, \$4K, 2009.
- SANS (SysAdmin, Audit, Networking, and Security) Institute, \$6K, May 2007.

- SANS (SysAdmin, Audit, Networking, and Security) Institute, \$38K, Dec. 2006.
- Samsung Electronics, \$40K, May 2006.
- SANS (SysAdmin, Audit, Networking, and Security) Institute, \$32,254, May 2006.

Internal Research Support (Funding from Virginia Tech Sources)

Co-PI, SCHEV grant, “RF Measurement hardware request: A proposal for SCHEV funding,” \$10,176; PI: J. Reed, co-PI: R. Nealy.

Co-PI, SCHEV grant, “Server purchase request,” \$49K; PI: D. Ha, co-PIs: S. Shukla and M. Hsiao.

Professional Activities: Technical Committees/Working Groups

- Member, IEEE Communications and Information Security Technical Committee, 2007–present.
- Member, Security Working Group of the *Wireless Innovation Forum* (formerly known as the *Software Defined Radio Forum*), 2008–2011.

Professional Activities: Editorships

Guest editor, International Journal of Distributed Sensor Networks: Special Issue on Energy Aware Communications in Wireless Sensor Networks, 2015.

Editor, Journal of Communications and Networks (Editor-in-Chief: H. Vincent Poor, Princeton University), 2009–present.

Professional Activities: Technical Program Committees

- TPC member, 2015 IEEE Conference on Computer Communications (INFOCOM).
- TPC member, 2014 IEEE Conference on Communications and Network Security (CNS).
- TPC member, 2014 IEEE Symposium on New Frontiers in Dynamic Spectrum Access Networks (DySPAN).
- TPC member, 2014 IEEE Conference on Computer Communications (INFOCOM).
- TPC member, 2013 IEEE Conference on Communications and Network Security (CNS).
- TPC member, 2013 IEEE Conference on Computer Communications (INFOCOM).
- TPC member, 2012 IEEE Conference on Computer Communications (INFOCOM).
- TPC member, 2011 IEEE Symposium on New Frontiers in Dynamic Spectrum Access Networks (DySPAN).
- TPC member, 2011 IEEE International Conference on Communications (ICC).
- TPC member, 2011 IEEE Conference on Computer Communications (INFOCOM).
- TPC member, 2010 ACM International Symposium on QoS and Security for Wireless and Mobile Networks (Q2SWinet).
- TPC member, 2010 IEEE International Conference on Communications (ICC).

- TPC member, 2010 IEEE Conference on Computer Communications (INFOCOM).
- TPC member, 2009 IEEE Global Communications Conference (GLOBECOM).
- TPC member, 2009 ACM International Symposium on QoS and Security for Wireless and Mobile Networks (Q2SWinet).
- TPC member, 2008 ACM International Workshop on QoS and Security for Wireless and Mobile Networks (Q2SWinet).
- TPC member, 2009 IEEE Conference on Computer Communications (INFOCOM).
- TPC member, 2008 International Conference on Computer Communications and Networks (ICCCN).
- TPC member, 2008 IEEE Workshop on Networking Technologies for Software Defined Radio Networks (held in conjunction with SECON 2008).
- TPC member, 2008 IEEE Global Communications Conference (GLOBECOM).
- TPC member, 2007 ACM International Workshop on QoS and Security for Wireless and Mobile Networks (Q2SWinet).
- TPC member, 2007 IEEE Workshop on Networking Technologies for Software Defined Radio Networks (held in conjunction with 2007 IEEE Communications Society Conference on Sensor, Mesh and Ad Hoc Communications and Networks (SECON 2007)).
- TPC member, 2007 Int'l Conference on Cognitive Radio Oriented Wireless Networks and Communications (CrownCom).
- TPC member, 2006 International Conference on Computer Communications and Networks (ICCCN).
- TPC member, 2007 IEEE International Conference on Communications (ICC).
- TPC member, 2006 IEEE Workshop on Networking Technologies for Software Defined Radio Networks (held in conjunction with 2006 IEEE Communications Society Conference on Sensor, Mesh and Ad Hoc Communications and Networks (SECON)).
- TPC member, 2005 IEEE Workshop on Information Assurance in Wireless Sensor Networks (WSNIA).

Professional Activities: Conference Organization, Committees, & Chairs

Planning committee member, *Wireless Spectrum R&D (WSRD) Senior Steering Group (SSG) Workshop VI: Federal-Commercial Spectrum Data: Understanding Information Exchange Needs, Issues, and Approaches*, Arlington, VA, Oct. 21, 2014. This workshop, which was partially sponsored by NSF, was organized by the National Telecommunications and Information Administration (NTIA), the National Coordination Office (NCO), and selected representatives from academia. This was an invitational workshop that brought together highly-visible experts from the Federal government, academia, and the private sector. The primary goal of the workshop is to assist in developing recommendations for the Federal spectrum research portfolio.

Best paper award committee member, *2014 ACM International Symposium on Mobile Ad Hoc Networking and Computing (MobiHoc)*, Aug. 2014.

Technical session chair, technical session titled "*Cognitive Radio and Dynamic Spectrum Management*," at the *2014 US-Korea Conference on Science, Technology and Entrepreneurship (UKC)*, Aug. 2014.

Publication chair, *2014 IEEE Symposium on New Frontiers in Dynamic Spectrum Access Networks (DySPAN)*, April 2014.

Co-organizer, *Enhancing Access to the Radio Spectrum (EARS) Workshop*, Aug. 4–6, 2010; with Jeff Reed (Virginia Tech) and Jennifer Bernhard (UIUC). This was an NSF-sponsored invitational workshop that brought together key researchers, policy makers, and other stakeholders in spectrum access and management. The main output of the workshop was a report that describes a vision for the future of spectrum access and a prioritized list of research topics that can realize that vision. Discussions from this workshop resulted in the creation of a new NSF program called *Enhancing Access to the Radio Spectrum (EARS)*.

Session chair, *2006 International Conference on Computer Communications and Networks (ICCCN)*.

Professional Activities: Reviewer & Panelist

Reviewer for various journals and conferences in the areas of cyber security, networking, and communications.

Panelist for NSF Secure and Trustworthy Cyberspace (SaTC) program, NSF Networking Technology and Systems (NeTS) program, and NSF Electrical, Communications and Cyber Systems (ECCS) Division.

Membership in Professional Societies

- Senior member, Institute of Electrical and Electronic Engineers (IEEE).
- Senior member, Association for Computing Machinery (ACM).
- Member, Korean-American Scientists and Engineers Association (KSEA).

University & Department Services

- Graduate student recruiting committee member, Spring 2014–present.
- Wireless communications and networking ECE junior faculty search committee, Fall 2013.
- Wireless communications and networking ECE senior faculty search committee, Fall 2013.
- Communications area faculty search committee, Spring 2013.
- Cyber security area faculty search committee, Spring 2012.
- Computer Engineering Seminar coordinator, Spring 2008.
- Computer Engineering Seminar coordinator, Fall 2005.
- Graduate student recruiting committee member, Spring 2005.
- Networking Area Committee, 2003–present.
- Computer Engineering Committee, 2003–present.

Student Mentorship and Advisees

Current Graduate Student Advisees:

- V. Kumar (PhD)
- S. Kim (PhD)
- S. Bhattarai (PhD)
- J. Liu (PhD)
- H. Li (PhD)

Previous Graduate Student Advisees (last known placement is also indicated):

- B. Gao (PhD, 2014), tenure-track assistant professor at University of Chinese Academy of Science, China.
- B. Bahrak (PhD, 2013).
- A. Ghumman (MS, 2013), Corning Inc.
- D. Ali (MS, 2012), Hexis Cyber Solutions, Inc.
- K. Bian (PhD, 2011), tenure-track assistant professor at Peking University, China.
- J. S. Thakkar (MS, 2010), Deutsche Bank.
- A. A. Deshpande (MS, 2010), ViaSat Inc.
- S. Kanaujia (MS, 2010), Microsoft.
- A. Afrashteh, (MEng, 2008), Microsoft.
- R. Chen (PhD, 2008), Microsoft.
- A. Patcha (PhD, 2006), Juniper Networks.
- M. Snow (MS, 2006), Virginia Tech Bioinformatics Institute.
- M. Chorzempa (MS, 2006), Northrop Grumman Sperry Marine.
- T. McNevin (MS, 2005), BAE Systems.

Previous Undergraduate Student Advisees:

- A. Welch
- B. Brisbon
- B. S. Roy

Student Association and Contest Mentorship:

- Faculty advisor, Virginia Tech Korean Student Association (KSA), 2009–2012.
- Co-faculty advisor, *2013 DARPA Spectrum Challenge*; together with Dr. M. Buehrer led a group of Virginia Tech graduate students; ranked 11th out of 90 teams in the qualification round.

International Collaboration & Visiting Scholars

- B. Chung 2012–2013, Electronics and Telecommunications Research Institute (ETRI), Korea.
- I. Park 2011–2012, Korea Ministry of Education, Science and Technology.

- H. Hong 2011–2012, Electronics and Telecommunications Research Institute (ETRI), Korea.
- J. Kim 2011–2012, Korea Communications Commission.
- S. Moon 2010–2011, Mokwon University, Korea.
- S. Park 2009–2010, Kongju National University, Korea.
- Y. Yee 2008–2009, Korea Polytechnic University
- J. Kim 2006–2007, Samsung Electronics.

Books (Monographs)

- [B1] K. Bian, J. Park, and B. Gao, *Cognitive Radio Networks: Medium Access Control for Coexistence of Wireless Systems*, Springer, 2014, print ISBN: 978-3-319-07328-6, online ISBN: 978-3-319-07329-3.

Book Chapters

- [BC1] J. Park and K. Bian, "Security of Cognitive Radios," in *Encyclopedia of Cryptography and Security*, Second Edition, Henk C. A. van Tilborg and Sushil Jajodia (Eds.), Springer, 2011, pp.1157–1158.
- [BC2] J. Park, K. Bian, and R. Chen, "Cognitive Radio Network Security," in *Cognitive Radio Communications and Networks: Principles and Practice*, A. Wyglinski, M. Nekovee, and T. Hou (Eds.), Elsevier, Dec. 2009, pp. 431–466.
- [BC3] F. Belanger, R. Crossler, J. Hiller, J. Park, and M. Hsiao, "Children online privacy: Issues with parental awareness and control," in *Annals of Emerging Research in Information Assurance, Security and Privacy Services*, H.R. Rao and S. Upadhyaya (Eds.), Vol. 4, Emerald Group Publishing, 2009, pp. 311–333.
- [BC4] M. Chorzempa, J. Park, M. Eltoweissy, and T. Hou, "Key management for wireless sensor networks in hostile environments," in *Security in Sensor Networks*, Yang Xiao, Ed., Auerbach Press, 2006, pp. 145–174.

Journal Publications

- [J1] K. Bian, J. Park, L. Chen, and X. Li, "Addressing the hidden terminal problem for heterogeneous coexistence between TDM and CSMA networks in white space," *IEEE Transactions on Vehicular Technology*, to appear.
- [J2] B. Bahrak and J. Park, "Coexistence decision making for spectrum sharing among heterogeneous wireless systems," *IEEE Transactions on Wireless Communications*, Vol. 13, Issue 3, 2014, pp. 1298–1307.
- [J3] B. Gao, J. Park, and Y. Yang, "Uplink soft frequency reuse for self-coexistence of cognitive radio networks," *IEEE Transactions on Mobile Computing*, Vol. 13, No. 6, June 2014, pp.1366–1378.
- [J4] J. Park, J. Reed, A. A. L. Beex, T. C. Clancy, V. Kumar, and B. Bahrak, "Security and enforcement in spectrum sharing (invited paper)," *Proceedings of the IEEE*, Vol. 102, Issue 3, 2014, pp. 270–281.
- [J5] K. Bian and J. Park, "Maximizing rendezvous diversity in rendezvous protocols for decentralized cognitive radio networks," *IEEE Transactions on Mobile Computing*, vol. 12, no. 7, July 2013, pp. 1294–1307.

- [J6] K. Bian, J. Park, X. Du, and X. Li, "Enabling fair spectrum sharing: Mitigating selfish misbehaviors in spectrum contention," *IEEE Network*, May/June 2013, pp. 16–21.
- [J7] F. Bélanger, R. E. Crossler, J. S. Hiller, J. Park, and M. Hsiao, "POCKET: A Tool for Protecting Children's Privacy Online," *Elsevier Decision Support Systems (Journal)*, vol. 54, issue 2, 2013, pp. 1161–1173.
- [J8] B. Bahrak and J. Park, "Security of spectrum learning in cognitive radios," *SK Telecom Telecommunications Review*, vol. 22, no. 6, Dec. 2012, pp. 850–864.
- [J9] R. Chen, J. Park, and K. Bian, "Robustness against Byzantine failures in distributed spectrum sensing," *Elsevier Computer Communications*, Vol. 35, Issue 17, Oct 2012, pp. 2115–2124.
- [J10] B. Gao, J. Park, Y. Yang, and S. Roy, "A taxonomy of coexistence mechanisms for heterogeneous cognitive radio networks operating in TV white spaces," *IEEE Wireless Communications*, Vol. 19, Issue 4, 2012, pp. 41–48.
- [J11] B. Bahrak, A. Deshpande, and J. Park, "Spectrum access policy reasoning for policy-based cognitive radios," *Elsevier Computer Networks*, vol. 56, issue 11, 2012, pp. 2649–2663.
- [J12] J. H. Reed, J. T. Bernhard, and J. Park, "Spectrum Access Technologies: The Past, the Present, and the Future (invited paper)," *Proceedings of the IEEE*, Vol. 100, Special Centennial Issue, May 2012, pp. 1676–1684.
- [J13] K. Bian, J. Park, and R. Chen, "Control channel establishment in cognitive radio networks using channel hopping," *IEEE Journal on Selected Areas in Communications*, Vol. 29, No. 4, April, 2011, pp. 689–703.
- [J14] A. B. MacKenzie, J. H. Reed, P. Athanas, C. W. Bostian, R. M. Buehrer, L. A. DaSilva, S. Ellingson, Y. T. Hou, M. Hsiao, J. Park, C. Patterson, S. Raman, and C. da Silva, "Cognitive Radio and Networking Research at Virginia Tech," *Proceedings of the IEEE*, Vol. 97, No. 4, Apr. 2009, pp. 660–688.
- [J15] J. Hiller, F. Belanger, M. Hsiao, and J. Park, "POCKET Protection," *American Business Law Journal*, Vol. 45, Issue 3, 2008, pp. 417–453.
- [J16] R. Chen, J. Park, and J. Reed, "Defense against primary user emulation attacks in cognitive radio networks," *IEEE Journal on Selected Areas in Communications*, vol. 26, no. 1, Jan. 2008, pp. 25–37.
- [J17] R. Chen, J. Park, T. Hou, and J. Reed, "Toward secure distributed spectrum sensing in cognitive radio networks," *IEEE Communications Magazine*, Vol. 46, No. 4, April 2008, p.50 – 55.
- [J18] A. Patcha and J. Park, "Network Anomaly Detection with Incomplete Audit Data," *Elsevier Computer Networks (journal)*, Vol. 51, Issue 13, 2007, pp. 3935–3955.
- [J19] A. Patcha and J. Park, "An overview of anomaly detection techniques: existing solutions and latest technological trends," *Elsevier Computer Networks (journal)*, Vol. 51, Issue 12, 2007, pp. 3448–3470.
- [J20] M. Chorzempa, J. Park, and M. Eltoweissy, "Key management for long lived sensor networks in hostile environments," *Elsevier Computer Communications (journal)*, Vol. 30, Issue 9, June 2007, pp. 1964–1979.
- [J21] R. Chen, J. Park, and R. Marchany, "A divide-and-conquer strategy for thwarting distributed denial-of-service attacks," *IEEE Transactions on Parallel and Distributed Systems*, Vol. 18, No. 5, May 2007, pp. 577–588.
- [J22] A. Patcha and J. Park, "A game theoretic formulation for intrusion detection in mobile ad hoc networks," *International Journal of Network Security*, Vol. 2, No. 2, Mar. 2006, pp. 131–137.
- [J23] J. Park, U. Savagaonkar, E. K. P. Chong, H. J. Siegel, and S. D. Jones, "Allocation of QoS connections in MF-TDMA satellite systems: A two-phase approach," *IEEE Transactions on Vehicular Technology*, Vol. 54, No. 1, Jan. 2005, pp. 177–190.

- [J24] J. Park, E. K. P. Chong, and H. J. Siegel, "Efficient multicast stream authentication using erasure codes," *ACM Transactions on Information and System Security*, Vol. 6, No. 2, May 2003, pp. 258–285.
- [J25] D. K. Kim, J. Park, and M. S. Lim, "BER performance of vestigial sideband wideband CDMA systems," *Electronics Letters*, 24th, Vol. 33, No.9, Apr. 1997, pp. 733–735.

Conference Proceedings

- [C1] S. Kim, J. Park, and K. Bian, "PSUN: An OFDM Scheme for Coexistence with Pulsed Radar," 2015 Int'l Conference on Computing, Networking, and Communications (ICNC), California, USA, Feb. 2015.
- [C2] J. S. Hiller and J. Park, "Spectrum sharing and privacy: A research agenda," 42nd Research Conference on Communication, Information, and Internet Policy (TPRC), Arlington, VA, Sep. 2014.
- [C3] V. Kumar, J. Park, and K. Bian, "Blind transmitter authentication for spectrum security and enforcement," 2014 ACM Conference on Computer and Communications Security (CCS), Arizona, USA, Nov. 2014. AR: 114/585 = 19.5%.
- [C4] B. Gao, J. Park, and Y. Yang, "Supporting mobile users in database-driven opportunistic spectrum access," 2014 ACM International Symposium on Mobile Ad Hoc Networking and Computing (MobiHoc), Aug. 2014. AR: 40/211 = 18.9%.
- [C5] L. Chen, K. Bian, L. Chen, C. Liu, J. Park, and X. Li, "A group-theoretic framework for rendezvous in heterogeneous cognitive radio networks," 2014 ACM International Symposium on Mobile Ad Hoc Networking and Computing (MobiHoc), Aug. 2014. AR: 40/211 = 18.9%.
- [C6] B. Bahrak, S. Bhattarai, A. Ullah, J. Park, J. Reed, and D. Gurney, "Protecting the primary users' operational privacy in spectrum sharing," 2014 IEEE International Symposium on Dynamic Spectrum Access Networks (DySPAN), April 2014. Awarded the **Best Paper Award**.
- [C7] B. Gao, Y. Yang, and J. Park, "A credit-token-based spectrum etiquette framework for coexistence of heterogeneous cognitive radio networks," 2014 IEEE Int'l Conference on Computer Communications (INFOCOM), April–May, 2014. AR: 320/1645 = 19.4%.
- [C8] V. Kumar, J. Park, T. C. Clancy, K. Bian, "PHY-layer authentication using hierarchical modulation and duobinary signaling," 2014 International Conference on Computing, Networking, and Communications (ICNC), Feb. 2014.
- [C9] J. Thakkar, D. Ali, J. Park, and S. Moon, "Securing a distributed policy-based cognitive radio," 2014 ACM Int'l Conference on Ubiquitous Information Management and Communication (IMCOM), Jan. 2014.
- [C10] K. Bian, J. Park, X. Du, and X. Li, "Ecology-inspired coexistence of heterogeneous wireless networks," 2013 IEEE Global Communications Conference (GLOBECOM), Atlanta, USA, Dec. 2013.
- [C11] V. Kumar, J. Park, T. C. Clancy, and K. Bian, "PHY-Layer authentication by introducing controlled inter symbol interference," 2013 IEEE Conference on Communications and Network Security (CNS), Washington, D.C., Oct., 2013. AR: 40/141 = 28%.
- [C12] D. Ali, J. Park, and A. Amanna, "A feature partitioning approach to case-based reasoning in cognitive radios," 2013 International Conference on Cognitive Radio Oriented Wireless Networks (CROWNCOM), July 2013.
- [C13] B. Bahrak, J. Park, and H. Wu, "Ontology-based spectrum access policies for policy-based cognitive radios," 2012 IEEE International Symposium on Dynamic Spectrum Access Networks (DySPAN), Oct. 2012. AR: 35/140 = 25%.

- [C14] B. Gao, J. Park, and Y. Yang, "Uplink soft frequency reuse for self-coexistence of cognitive radio networks operating in white-space spectrum," 2012 IEEE Int'l Conference on Computer Communications (INFOCOM), Mar. 2012. AR: 278/1547 = 18%.
- [C15] B. Gao, Y. Yang, and J. Park, "Channel aggregation in cognitive radio networks with practical considerations," 2011 IEEE International Conference on Communications (ICC 2011), Kyoto, Japan, June, 2011.
- [C16] K. Bian and J. Park, "Asynchronous channel hopping for establishing rendezvous in cognitive radio networks," 2011 IEEE Int'l Conference on Computer Communications (INFOCOM) Mini-Conference, Apr. 2011.
- [C17] B. Bahrak, A. Deshpande, M. Whitaker, and J. Park, "BRESAP: A policy reasoner for processing spectrum access policies represented by binary decision diagrams," IEEE Int'l Dynamic Spectrum Access Networks Symposium (DySPAN), Apr. 2010.
- [C18] K. Bian and J. Park, "Addressing the hidden incumbent problem in 802.22 networks," Software Defined Radio Forum Technical Conference and Product Exposition, Dec. 2009.
- [C19] B. Bahrak, A. Deshpande, and J. Park, "A policy reasoner for policy-based dynamic spectrum access," Software Defined Radio Forum Technical Conference and Product Exposition, Dec. 2009.
- [C20] K. Bian, J. Park, and R. Chen, "A Quorum-based Framework for Establishing Control Channels in Dynamic Spectrum Access Networks," 2009 ACM International Conference on Mobile Computing and Networking (MobiCom), Sep. 2009, Beijing, China. AR: 30/282 = 10.6%.
- [C21] K. Bian and J. Park, "A Coexistence-Aware Spectrum Sharing Protocol for 802.22 WRANs," International Conference on Computer Communications and Networks (ICCCN '09), San Francisco, USA, Aug. 2009.
- [C22] S. Xiao, J. Park, and Y. Ye, "Tamper Resistance for Software Defined Radio Software," IEEE Computer Software and Applications Conference (COMPSAC), July 2009. AR: 47/231 = 20.3%.
- [C23] K. Bian, J. Park, M. Hsiao, F. Belanger, and J. Hiller, "Evaluation of Online Resources in Assisting Phishing Detection," IEEE/IPSJ International Symposium on Applications and the Internet (SAINT), Seattle, USA, July 2009. AR: 18/53 = 34%.
- [C24] K. Bian and J. Park, "Security Vulnerabilities in IEEE 802.22 (Invited Paper)," International Wireless Internet Conference (WICON), Nov. 2008.
- [C25] R. E. Crossler, F. Bélanger, J.S. Hiller, J. Park, M. Hsiao, K. Channakeshava, K. Bian, and E. Korbich, "Determinants of Protection Behaviors for Online Privacy of Children," 39th Annual Meeting of The Decision Sciences Institute (DSI 2008), Nov. 2008.
- [C26] K. Channakeshava, K. Bian, M. Hsiao, J. Park, R. Crossler, F. Belanger, P. Aggarwal, and J. Hiller, "On Providing Automatic Parental Consent over Information Collection from Children," International Conference on Security and Management (SAM '08), July 2008, pp. 196–202.
- [C27] R. Chen, J. Park, and K. Bian, "Robust distributed spectrum sensing in cognitive radio networks," 2008 IEEE Int'l Conference on Computer Communications (INFOCOM) Mini-Conference, Apr. 2008.
- [C28] K. K. Bae, J. Park, and J. H. Reed, "An overview of cognitive radio research at Virginia Tech," 2007 US-Korea Conference on Science, Technology, and Entrepreneurship (UKC 2007), Aug. 2007.
- [C29] R. E. Crossler, F. Bélanger, J. S. Hiller, P. Aggarwal, K. Channakeshava, K. Bian, J. Park, and M. Hsiao, "Parents and the Internet: Privacy Awareness, Practices, and Control," America's Conference on Information Systems (AMCIS), Keystone, Colorado, Aug. 2007.
- [C30] K. Bian and J. Park, "Segment-Based Channel Assignment in Cognitive Radio Ad Hoc Networks," International Conference on Cognitive Radio Oriented Wireless Networks and Communications (CrownCom 2007), Aug. 2007.

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- [C37] R. Chen, M. Snow, J. Park, M.T. Refaei, and M. Eltoweissy, "Defending against routing disruption attacks in mobile ad hoc networks," IEEE Global Telecommunications Conference (GLOBECOM 2006), Nov.–Dec. 2006.
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- [C40] J. Park and R. Chen, "Ensuring trust in cognitive radio networks (invited paper)," Oak Ridge National Lab Cyber Security and Information Infrastructure Research (CSIIR) Workshop, May 2006.
- [C41] R. Chen and J. Park, "Attack Diagnosis: Throttling distributed denial-of-service attacks close to the attack sources," 2005 IEEE Int'l Conference on Computer Communications and Networks (ICCCN), Oct. 2005. AR: 87/260 = 33.5%.
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- [C49] J. Park, E. K. P. Chong, and H. J. Siegel, "Efficient multicast packet authentication using signature amortization," 2002 IEEE Symposium on Security and Privacy, May 2002, pp. 227–240. AR: 21/95 = 22.1%.
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- [C51] J. Park and D. K. Kim, "Performance analysis of wideband DS-CDMA systems using vestigial sideband modulation in multipath fading channels," 1996 Autumn Conference of Korea Institute of Communication Sciences, Nov. 1996, pp. 116–120.
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Posters and Miscellaneous Presentations

- [P1] V. Kumar, J. Park, J. Kim, and A. Aziz, "Physical layer authentication using controlled inter-symbol interference," 2012 IEEE International Symposium on Dynamic Spectrum Access Networks (DySPAN), Poster Session, Oct. 2012.
- [P2] A. Welch and J. Park, "Tamper Resistant Software through Multi-Block Hashing and Encryption: An Implementation," 2009 IEEE Virginia Mountain Section Undergraduate Student Paper Contest. **Awarded first place.**
- [P3] M. Chorzempa and J. Park, "Key management in sensor networks," 2004 Virginia Tech Research Symposium for Undergraduate Research in Engineering. Awarded the **Best Presentation Award.**

Technical Reports

- [R1] J. Park and J. Reed, "Prior-Art Privacy Preserving Databases and Threat Models," Technical Report TR-ECE-13-06, Dept. of Electrical and Computer Engineering, Virginia Tech, June 2013.
- [R2] J. Park, "Transmitter Authentication in Cognitive Radio Networks," Technical Report TR-ECE-13-05, Dept. of Electrical and Computer Engineering, Virginia Tech, May 2013.
- [R3] J. Park, "Countermeasures against Attacks Targeting Cognitive Radio Networks," Technical Report TR-ECE-12-10, Dept. of Electrical and Computer Engineering, Virginia Tech, Oct. 2012.
- [R4] J. Park, "Security Threats to Cognitive Radio Networks: Complex Attacks," Technical Report TR-ECE-12-05, Dept. of Electrical and Computer Engineering, Virginia Tech, May 2012.
- [R5] J. Park, "Characterization and Analysis of Threats to Cognitive Radio Devices and Networks," Technical Report TR-ECE-11-05, Dept. of Electrical and Computer Engineering, Virginia Tech, May 2011.
- [R6] J. Park, "Overview of security threats to cognitive radio devices and networks," Technical Report TR-ECE-11-04, Dept. of Electrical and Computer Engineering, Virginia Tech, Apr. 2011.
- [R7] R. Chen, J. Park, and R. Marchany, "TRACK: A novel approach for defending against distributed denial-of-service attacks," Technical Report TR-ECE-06-02, Dept. of Electrical and Computer Engineering, Virginia Tech, Feb. 2006.

- [R8] R. Chen, M. Snow, J. Park, M. T. Refaei, and M. Eltoweissy, "Defense against routing disruption denial-of-service attacks in mobile ad hoc networks," Technical Report TR-ECE-05-11, Dept. of Electrical and Computer Engineering, Virginia Tech, Nov. 2005.
- [R9] T. J. McNevin, J. Park, and R. Marchany, "pTCP: A client puzzle protocol for defending against resource exhaustion denial of service attacks," Technical Report TR-ECE-04-10, Dept. of Electrical and Computer Engineering, Virginia Tech, Oct. 2004.

Invited Presentations & Talks

- "Federal-commercial spectrum sharing and related enforcement and security issues," Electronics and Telecommunications Research Institute (ETRI), South Korea, July 2014.
- "Spectrum enforcement, security, and privacy in shared spectrum access," Univ. of Hawaii, Feb. 6, 2014.
- "Spectrum enforcement and security in database-driven spectrum sharing," *Federal Communications Commission Workshop on the Spectrum Access System (SAS) for the 3.5 GHz Band*, Washington D.C., Jan. 14, 2014.
- "Spectrum enforcement, security, and privacy in database-driven spectrum sharing," 2013 US-Korea Conference on Science, Technology, and Entrepreneurship (UKC13), New York, Aug. 2013.
- "Enforcing Spectrum Access Rules in Spectrum Sharing," Univ. of Arizona, Oct. 2012.
- "Spectrum Rule Enforcement and Security in Opportunistic Spectrum Access," Electronics and Telecommunications Research Institute (ETRI), Korea, June 2012.
- "Trustworthy cognitive radio networks," Univ. of Texas at Arlington, April, 2011.
- "Emerging Security Challenges in Dynamic Spectrum Access Networks," Korea University, South Korea, June 2010.
- "Emerging Security Challenges in Cognitive Radio Networks," Sungkyunkwan University, South Korea, June 2010.
- "Emerging Security Challenges in Cognitive Radio Networks," Ehwa Women University, South Korea, May 2010.
- "Emerging Security Challenges in Cognitive Radio Networks" Army Research Laboratory, Adelphi, MD, Mar. 2010.
- "Security problems unique to cognitive radio systems and networks," IDGA (Institute for Defense and Government Advancement) Software Radio Communications Summit, Washington DC, Mar. 2010.
- "Security and Behavioral Control Issues in Policy-based Cognitive Radios," DARPA Workshop on Machine Learning for Behavioral Control of Cognitive Radios, New Jersey, Sep. 2009.
- "Security Issues in Cognitive Radio Networks," BAE Systems, Virginia, Sep. 2009.
- "Toward Trustworthy Cognitive Radio Networks," DARPA, Virginia, Aug. 2009.
- "Security Issues in Cognitive Radio Networks," Yonsei University, South Korea, July 2009.
- "Security Issues in Cognitive Radio Networks," Electronics and Telecommunications Research Institute (ETRI), South Korea, July 2009.
- "Programmability vs. security," Panel Presentation at the 2008 Int'l Wireless Internet Conference (WICON), Panel Title: Software-defined radios: How much programmability do we really need?, Nov. 2008.

- “Security issues in cognitive radio networks,” Workshop: Setting the Regulatory Framework for Next Generation Radio Technologies (as part of the 2008 SDR Forum Technical Conference 2008), Oct. 2008.
- “Challenges in the design of MAC protocols for dynamic spectrum access networks,” 2008 US-Korea Conference on Science, Technology, and Entrepreneurship (UKC), Aug. 2008.
- “POCKET: A Technical and Behavioral Concept for Protecting Children’s Online Privacy,” University Libraries In-Service Day 2006, Virginia Tech, May 2006.
- “Countermeasures for Large-Scale Distributed Denial-of-Service Attacks,” First Virginia Summit on Secure and Dependable Computing Systems, University of Virginia, Charlottesville, VA, Apr. 2005.
- “Defending against large-scale distributed denial-of-service attacks,” Oak Ridge National Lab Cyber Security and Information Infrastructure Research Group (CSIIR) Annual Workshop, Oak Ridge, TN, Mar. 2005.

Patents and Provisional Patents

U.S. provisional patent

Application number: 62039649

Title of invention: Methods for Protecting Location Privacy in Database-Driven Spectrum Sharing

Inventors: Jung-Min Park and Behnam Bahrak

Filing date: Aug. 20, 2014.

IP Disclosures (Pre-Patent)

IP disclosure: VTIP: 14-143

Disclosure date: May 19, 2014.

Filed in Apr. 2014.

“Methods for protecting location privacy in database-driven spectrum sharing”

IP disclosure: VTIP: 10-046

Filed in Nov. 09

“A methodology for spectrum access policy reasoning in cognitive radios”

IP disclosure: VTIP: 09-137

Filed in Apr. 09

“A Methodology for Phishing Site Detection Using Online Resources”

IP disclosure: VTIP: 07-015

“POCKET: Parental Online Consent for Kids' Electronic Transactions”

Courses Taught and/or Developed

ECE/CS 4504	Computer Organization
ECE/CS 5560	Network and Computer Security
ECE 2004	Electric Circuit Analysis
ECE 3534	Microprocessor System Design
ECE 2504	Introduction to Computer Engineering

ECE 4614	Telecommunication Networks
ECE 2574	Algorithms and Data Structures
ECE/CS 5560	Fundamentals of Information Security
ECE 3574	Applied Software Design