

# Hayoung Oh, Ph.D

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Assistant Professor

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## EDUCATION :

- **Ph.D**, Computer Science & Engineering,
  - Seoul National University, Seoul, Korea, Sep.2006~Feb.2013 (GPA 3.9/4.3)  
(Advisor: Prof. Chong-kwon Kim)
- **M.S**, Computer Science & Engineering,
  - Ewha Womans University, Seoul, Korea, Mar.2004~Feb.2006 (GPA 4.0/4.3)  
(Advisor: Prof. Kijoon Chae)
- **B.S**, Computer Science,
  - Duksung Womans University, Seoul, Korea, Mar.1998~Feb.2002 (GPA 3.79/4.5)

## CAREER HISTORY :

Sep.2016 ~ Now	<b>Ajou University, Suwon, Assistant professor (DASAN Univ. Colleague)</b>
Sep.2013 ~ Aug.2016	<b>Soongsil University, Seoul, Assistant professor (Electronic Engineering)</b>
Mar.2013 ~ Aug.2013	<b>University of Seoul, Seoul, Research Assistant professor (Computer science)</b>
Mar.2011 ~ Feb.2013	<b>Hansung University, Seoul, Part-time Lecture (Computer science)</b>
Apr.2010 ~ Oct.2010	<b>U.C. Berkeley, USA, Visiting Scholar in Scott Schenker lab.</b> ( <a href="http://www.eecs.berkeley.edu/Faculty/Homepages/shenker.html">http://www.eecs.berkeley.edu/Faculty/Homepages/shenker.html</a> )
Sep.2006~Feb.2013	<b>Seoul National University, Seoul, SCONE (Social &amp; Computer Network) lab.</b> ( <a href="http://popeye.snu.ac.kr/">http://popeye.snu.ac.kr/</a> )
Mar.2004 ~ Feb.2006	<b>Ewha Womans University, Seoul</b> <b>ICNS (Information Communication &amp; Network Security) lab.</b> ( <a href="http://net.ewha.ac.kr/">http://net.ewha.ac.kr/</a> )
Nov.2001~Feb.2004	<b>Shinhan Financial Group e-Shinahn, Seoul, Researcher &amp; Developer</b> ( <a href="http://www.shinhangroup.com">http://www.shinhangroup.com</a> )
Mar.1998 ~ Feb.2002	<b>Duksung Womans University, Seoul</b> ( <a href="http://sie.duksung.ac.kr/">http://sie.duksung.ac.kr/</a> )

## SELECTED PUBLICATIONS :

- **International Journal (SCIE) [Publish]**
  - Jaehoon Lee, Giseop Noh, and **Hayoung Oh**, "Trustor Clustering with an Improved Recommender System Based on Social Relationships", Elsevier Information Systems,

Volume 77, September 2018. (SCI)

- Giseop Noh, **Hayoung Oh**, and Jaehoon Lee, "Power Users Are Not Always Powerful: the Effect of Social Trust Clusters in Recommender Systems", *Information Sciences*, Volume 462, Pages 1-15, September 2018. (SSCI)
- Seohyang Kim, **Hayoung Oh** and Chongkwon Kim, "eff-HAS: Achieve Higher Efficiency in Data and Energy Usage on Dynamic Adaptive Streaming", *KICS Journal of Communications and Networks (JCN)*, June 2018. (SCIE)
- Giseop Noh, and **Hayoung Oh**, "A Field Study on Concurrent Spare Parts Recommendation in an Airborne Weapon System", *Defence Science Journal*, Vol. 68, No. 2, pp.282-289, March 2018. (SCIE)
- Sihyun Jeong, Giseop Noh, **Hayoung Oh** and Chongkwon Kim, "Follow Spam Detection based on Cascaded Social Information", *Elsevier Information Sciences*, Volume 369, Pages 481–499, November 2016. (SCIE)
- **Hayoung Oh**, "Mobility-Aware Video Streaming in MIMO-Capable Heterogeneous Wireless Networks", *Hindawi Publishing Corporation Mathematical Problems in Engineering*, Oct. 2016. (SCIE)
- S. Kim, **H. Oh**, and C. Kim, "Energy Cognitive Dynamic Adaptive Streaming over HTTP", *KSII Transactions on internet and information systems*, June. 2015. (SCIE)
- **H. Oh**, and R. Ran, "Stochastic Policy-based Wireless Energy Harvesting in Green Cognitive Radio Network", *EURASIP Journal on Wireless Communications and Networking*, June. 2015. (SCIE)
- R. Ran, and **H. Oh**, "Adaptive Sparse Random Projections for Wireless Sensor Networks with Energy Harvesting Constraints", *EURASIP Journal on Wireless Communications and Networking*, April. 2015. (SCIE)
- G. No, **H. Oh**, Kyu-haeng Lee and C. Kim, "Toward Trustworthy Social Network Services: A Robust Design of Recommender Systems", *Journal of Communications and Networks (JCN)*, April. 2015. (SCIE)
- **H. Oh**, and Sanghyun Ahn, "A Full-duplex Relay based Hybrid Transmission Mechanism for the MIMO-capable Cooperative ITS", *International Journal of Distributed Sensor Networks (IJDSN)*, April. 2015. (SCIE)
- **H. Oh**, "Optimal Stochastic Policies in a network coding capable Ad Hoc Networks", *KSII Transactions on internet and information systems*, Dec. 2014. (SCIE)
- G. No, **H. Oh**, Y. Kang and C. Kim, "PSD: Practical Sybil Detection Schemes Using Stickiness and Persistence in Online Recommender Systems", *Elsevier Information Sciences*, May. 2014. (SCIE)
- G. No, Y. Kang, **H. Oh** and C. Kim, "Robust Sybil attack defense with information level in online recommender systems", *Expert Systems With Applications (ESWA) of Elsevier*, Sep. 2013. (SCIE)
- **H. Oh** and C. Kim, "Network Coding-Based Mobile Video Streaming over Unreliable Wireless Links", *IEEE Communications Letters*, Jan. 2013. (SCI)

- **H. Oh**, "A Robust Mobile Video Streaming in Heterogeneous Emerging Wireless Systems", KSII Transactions on Internet and Information Systems", Sep. 2012. (SCIE)
- **H. Oh**, J. Yoo, C. Kim and S. Ahn, "VMIPv6: A Seamless and Robust Vehicular MIPv6 for Vehicular Wireless Networks and Vehicular Intelligent Transportation Systems (V-Winet/V-ITS)", Journal of Information Science and Engineering (JISE), May. 2010. (SCIE)
- **H. Oh**, K. Yoo, J. Na and C. Kim, "A Seamless Handover Scheme in IPv6-Based Mobile Networks", International Journal of Ad Hoc and Ubiquitous Computing (IJAHUC), Jan. 2009. (SCIE)
- **H. Oh**, K. Yoo, J. Na and C. Kim, "A Robust Seamless Handover scheme for the Support of Multimedia Services in Heterogeneous Emerging Wireless Networks" accepted to Wireless Personal Communications (WPC) of Springer, 2008. (SCIE)
- **H. Oh**, and K. Chae, "An Energy-Efficient Sensor Routing with low latency, scalability for Smart Home Networks," International Journal of Smart Home (IJSH), VOL.1 No.2, July 2007.
- **H. Oh**, J. Lim, K. Chae and J. Na, "Home Gateway with Automated Real-Time Intrusion Detection for Secure Home networks", ICCSA 2006, LNCS 3983, May 2006. (SCIE)
- **H. Oh**, H. Bahn and K. Chae, "An Energy-Efficient Sensor Routing Scheme for Home Automation Networks," IEEE Transactions on Consumer Electronics, Vol.51, No.3, pp.836-839, Aug.2005. (SCI)

#### ■ Scopus

- Ji Hyeon Lee and **Hayoung Oh**, "Quantitative and Qualitative Information Analysis based Influencer-aware YouTube Channel Ranking Scheme", Advances in Science, Technology and Engineering Systems Journal, Nov. 2019. (Scopus)
- Yi Liang Chen, Rong Ran and **Hayoung Oh**, "Alternating-Projection-Based Channel Estimation for Multicell Massive MIMO Systems", J. Inf. Commun. Converg. Eng. (JICCE) 16(1): 17-22, Mar. 2018. (Scopus)
- **Hayoung Oh** and Rong Ran, "An Optimal Energy Commuters Scheme in Two-Way Cooperative VANETs Communications", INFORMATION JOURNAL, Vol.21, No.2, pp.659-670, Feb. 2018. (Scopus)
- **Hayoung Oh** and Sangsoon Lim, "Light-Weight Routing Protocol in IoT-Based Inter-Device Telecommunication Wireless Environment", International Journal of Electrical and Computer Engineering (IJECE), Vol. 6, No. 5, pp. 2352~2361, ISSN: 2088-8708, Oct. 2016. (Scopus)
- Sangsoon Lim and **Hayoung Oh**, "EETA: An Energy Efficient Transmission Alignment for Wireless Sensor Network Applications", International Journal of Electrical and Computer Engineering (IJECE), Vol. 6, No. 5, pp. 2345~2351, ISSN: 2088-8708, Oct. 2016. (Scopus)
- **Hayoung Oh**, Cliff C. Zou and Soyoung Park, "An Enhanced Community-based Reputation System for Vehicular Ad Hoc Networks", International Journal of Engineering and Technology (IJET), Vol 8 No 5, pp.2272-2287, ISSN (Print) : 2319-8613, Nov. 2016. (Scopus)

- Hwan Kim, Sanghyun Ahn, **Hayoung Oh** and Joon-Sang Park, "A Residual Energy Gradient Cognitive Scheme for Cluster Reconstruction in Wireless Sensor Networks", INFORMATION JOURNAL, Vol.18, No.8, pp.659-670, Aug. 2015. (Scopus)
  - **H. Oh** and S. Ahn, "A Mechanism to Resolve Congestion by Adapting the MIMO Transmission Mode in the MANET Environment", Information Journal, Vol.17, No.11(A), pp.5387-5396, November, 2014
  - **H. Oh** and S. Ahn, "Simulation based opportunistic network coding in Ad hoc networks", Ubiquitous Information Technologies and Applications Lecture Notes in Electrical Engineering Volume 280, pp 827-842, 2014
- **International Conference**
- J. Park and **H. Oh**, "A Study on the Development of Computing Thinking based on Machine Learning Applications", Canada International Conference on Education (CICE), University of Toronto Mississauga on Jun 24~27, 2019
  - G. Noh and **H. Oh**, "AuRo-Rec: An Unsupervised and Robust Sybil Attack Defense in Online Recommender Systems", SAI Intelligent Systems Conference 2015 (IntelliSys 2015), London, United Kingdom on Nov. 10~11, 2015
  - R. Ran, J. Zhao and **H. Oh**, "Multimode Precoded MIMO-based Qualitative Video Streaming using Frame Type Information", The 6th International Conference on ICT Convergence (ICTC 2015), Jeju Island, Korea on Oct. 28~30, 2015
  - S. Kim, **H. Oh**, and C. Kim, "ePF-DASH: Energy-Efficient Prefetching Based Dynamic Adaptive Streaming over HTTP", 2015 International Conference on Big Data and Smart Computing (BigComp 2015), Jeju Island, Korea on Feb. 9~11, 2015
  - J. Jin, S. Ahn and **H. Oh**, "A Multipath Routing Protocol Based on Bloom Filter for Multi-hop Wireless Networks", The 29th edition of the International Conference on Information Networking (ICOIN 2015), Siem Reap, Cambodia on Jan. 12~14, 2015
  - G. Noh and **H. Oh**, "Influence level-based Sybil Attack Resistant Recommender Systems", The Seventh IEEE International Conference on Social Computing and Networking (SocialCom2014), Sydney Australia on Dec. 3~5, 2014
  - **H. Oh** and S. Ahn, "A Compensation-based Cooperative Mechanism to Improve the Performance of IEEE 802.11 WLANs", The 9th KIPS International Conference on Ubiquitous Information Technologies and Applications (CUTE 2014), Guam, USA on Dec. 17~ 19, 2014
  - **H. Oh**, S. Ahn and Y. Cheng, "An Opportunistic Transmission Mechanism for Seamless Video Streaming in the MIMO-capable Wireless Ad Hoc Network", The Sixth International Conference on Ubiquitous and Future Networks (ICUFN2014), Shanghai, China on July 8~11, 2014
  - S. Ahn and **H. Oh**, "A Traffic Control Mechanism for the MIMO-based MANET", International Conference on Computer Applications and Information Processing Technology (CAIPT2014), Ulaanbaatar, Mongolia on June 27~28, 2014
  - **H. Oh** and S. Ahn, "Simulation based opportunistic network coding in Ad hoc networks",

The 8th International Conference on Ubiquitous Information Technologies and Applications (CUTE 2013), Danang, Vietnam on Dec. 18~20, 2013

- **H. Oh**, J. Lee and C. Kim, "A flow-based hybrid mechanism to improve performance in NOX and wireless OpenFlow switches", IEEE 74st Vehicular Technology Conference (VTC), 2011
- **H. Oh**, J. Lee, S. Lee and C. Kim, "iXOR-Intelligent XOR using Holding-x Strategy in Ad hoc networks", IEEE 73st Vehicular Technology Conference (VTC), 2011
- Y. Kang, J. Choi, **H. Oh** and C. Kim, "An MIM-Aware Association Control Scheme for OpenFlow Access Points in NOX Architectures", International Conference on Future Internet Technologies (CFI), 2011
- **H. Oh** and C. Kim, "A Robust handover under analysis of unexpected vehicle behaviors in Vehicular Ad-hoc Network", IEEE 71st Vehicular Technology Conference (VTC), 2010
- **H. Oh**, J. Yoo, C. Kim and S. Ahn, "A Novel Mobility Management for Seamless Handover in Vehicle-To-Vehicle/Vehicle-To-Infrastructure (V2V/V2I) Networks," International Symposium on Communications and Information Technologies (ISCIT), 2009
- **H. Oh** and C. Kim, "An Auto-mated Network Management using Artificial Intelligent Techniques", IEEE 17th International Conference on Fuzzy Systems (FUZZ-IEEE), 2009
- J. Lee, **H. Oh** and C. Kim, "A Robust Optical Light-path Establishment Scheme for Core Network Architecture of Future Internet" , "IEEE Future Generation Communication and Networking (FGCN 2008), December, 2008
- **H. Oh**, et al., "An Enhanced Fast Handover Scheme with Temporal Reuse of CoAs and PBP in IPv6-Based Mobile Networks," IEEE IMIS, April. 2007

### **TECHNICAL SKILLS:**

- Languages : R, Python, C, C++, Objective-C, C#, Java, JavaScript
- Systems : UNIX/Linux, MacOSX, Mobile Platforms (Qualcomm BREW, Google Android, Apple iOS), Embedded Platforms (TinyOS, ARM7/9, 8051)
- Web technologies : ASP, JSP, HTML, XML, client/server architecture
- Databases : MySql, MS-SQL server, JDBC, ODBC

### **TEACHING:**

- **Data Analysis and Artificial Intelligence** : R or Python based Data Analysis and AI
- **Programming** : Advanced programming, Network programming, Linear programming
- **Mathematics** : Engineering mathematics, Discrete mathematics, Random process with probability, Linear algebra
- **Engineering** : Electric circuit, Advanced electric circuit, Computer Network

### **PROJECTS & RESEARCH INTERESTS:**

- AI based IoT Data Analysis for Green Cognitive Networks – **National Research Foundation of Korea (NRF)**, (May 2017-April 2020) [Research Manager]
- Network coding based Green Cognitive Networks – **National Research Foundation of Korea**

**(NRF), (Jun. 2014 – May 2017) [Research Manager]**

- Artificial Intelligent Techniques: Traffic classifications using Artificial Intelligent Techniques
- Future Internet: Designed an optical network and Software Defined Networking technique  
(NOX, OpenFlow Switches) based Future Internet Architecture
- Performance Analysis: Optimal theory, (PO)MDP (Partially Observable Markov Decision Process), based performance analysis