Song Noh

No 357, 465 Northwestern Avenue, West Lafayette, IN 47907 (Email: songnoh82@gmail.com, Phone: 765-404-3580)

OBJECTIVE To seek an internship or full-time position in the system engineering area especially in physical layer design

VISA STATUS F1

EDUCATION

Purdue University Indiana, USA
Ph.D. Candidate in Electrical and Computer Engineering Aug. 2011 – Present
Advisors: Professors Michael Zoltowski and David Love

Korea Advanced Institute of Science and Technology (KAIST) Daejeon, South Korea
Master of Science in Electrical Engineering Feb. 2010
Advisor: Professor Youngchul Sung

Soongsil University Seoul, South Korea
Bachelor of Engineering in Electrical Engineering Feb. 2008

EXPERIENCE

Purdue University Indiana, USA
Research Assistant Jan. 2012 - Present

- Pilot beam pattern sequence design in massive MIMO systems
- Precoder design for blind separation and blind estimation in MIMO systems
- Development of a link level simulator based on Digital Video Broadcasting (DVB-T2)
  - Implementation of symbol spreading and frequency/cell/time interleavers with LDPC code

Wireless Information Systems Research Lab Daejeon, South Korea
Researcher Mar. 2010 - Jun. 2011

- Researched user scheduling algorithms for interference alignment via majorization theory

Korea Advanced Institute of Science and Technology (KAIST) Daejeon, South Korea
Research Assistant Feb. 2008 - Feb. 2010

- Linear precoder design for blind channel estimation in MIMO-OFDM systems
- Developtment of a link level simulator for high mobility environments based on 802.16e/m
  - Implementation of tone clustering, slot mapping, and bit interleaver with convolutional code

Communication Network Security Lab Seoul, South Korea
Research Intern Oct. 2006 - Feb. 2007

- Development of voice spam control algorithm for Voice over IP systems (VoIP).

Republic of Korea Army Paju, South Korea
Sergeant: Mandatory military service in South Korea Dec. 2002 - Jan. 2005

PUBLICATIONS

Journal Articles

Song Noh, Michael Zoltowski, and David Love, "Training sequence design for feedback assisted hybrid beamforming in massive MIMO systems," submitted to *IEEE Transactions on Signal Processing,* Jul. 2014 (Available at http://arxiv.org/abs/1407.1786).

Song Noh, Michael Zoltowski, Youngchul Sung, and David Love, "Pilot beam pattern design for channel estimation in massive MIMO systems," *IEEE Journal of Selected Topics in Signal Processing,* vol. 8, no. 5, pp. 787 – 801, Oct. 2014 [Online]

Song Noh, Youngchul Sung, and Michael Zoltowski, "A new precoder design for blind channel estimation in MIMO-OFDM systems," *IEEE Transactions on Wireless Communications,* vol. 13, no. 12, pp. 7011 – 7024, Dec. 2014 [Online].

Conference Papers

Song Noh, Michael Zoltowski, and David Love, "Downlink training codebook design and hybrid precoding in FDD massive MIMO systems," in *Proc. IEEE Global Communications Conference (Globecom),* Austin, TX, Dec. 2014 (**Best Paper Award in Globecom 2014**).

Song Noh, Michael Zoltowski, Youngchul Sung, and David Love, "Training signal design for channel estimation in massive MIMO systems," in *Proc. IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP),* Florence, Italy, May 2014.

Song Noh and Michael Zoltowski, "A new precoder design for precoding-based blind channel estimation for MIMO-OFDM systems," in *Proc. IEEE Global Communications Conference (Globecom),* Atlanta, GA, Dec. 2013.

Song Noh and Michael Zoltowski, "Blind separation for precoding-based blind channel estimation for MIMO-OFDM systems," in *Proc. Asilomar Conference on Signals, Systems, and Computers (Asilomar),* Pacific Grove, CA, Nov. 2013.

Song Noh, Michael Zoltowski, Youngchul Sung, and David Love, "Optimal pilot beam pattern design for massive MIMO systems," in *Proc. Asilomar Conference on Signals, Systems, and Computers (Asilomar),* Pacific Grove, CA, Nov. 2013.

Song Noh and Youngchul Sung, "Linear precoder design for blind channel estimation for MIMO-OFDM systems under a sparse structure," in *Proc. Institute of Electronics Engineers of Korea (IEEK),* Jun. 2011.

Song Noh and Youngchul Sung, "Precoder design for blind channel estimation in multiple OFDM systems," in *Proc. Asia Pacific Signal and Information Processing Association (APSIPA),* Dec. 2010.

ACTIVITIES

Invited Talks

Pilot beam pattern sequence design in massive MIMO systems, Soongsil University	Sep. 2014
Pilot beam pattern sequence design in massive MIMO systems, KAIST	Aug. 2014

Teaching Assistant

Digital Signal Processing I (ECE 538), Purdue University	Fall 2014
Advanced Communication System (EE 522), KAIST	Fall 2009
Communication System (EE 421), KAIST	Spring 2009

HONORS AND AWARDS

Globecom 2014 Best Paper Award (co-authored with M. Zoltowski and D. Love)

Soongsil University Talented Scholar Fellowship — Sep. 2012 - May 2013

GPA Scholarship, Soongsil University — 2005 - 2007

COMPUTER SKILLS

MATLAB, Simulink, C, and C++