Junhyug Noh

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RESEARCH INTERESTS

Object detection and its related high-level vision tasks
(*e.g.* semantic/instance segmentation, scene understanding, and image captioning)

EDUCATION

Seoul National University, Seoul, Korea — Mar 2015 – Feb 2020
- Ph.D. in Computer Science and Engineering
- Thesis: Improving Object Detection in Hard Conditions of Scale, Occlusion and Label
- Advisor: Prof. Gunhee Kim
- Total GPA: 4.08 / 4.3

Seoul National University, Seoul, Korea — Mar 2013 – Feb 2015
- M.S. in Computer Science and Engineering
- Thesis: Machine Learning Models and Missing Data Imputation Methods in Predicting the Progression of IgA Nephropathy
- Advisor: Prof. Robert Ian McKay
- Total GPA: 4.24 / 4.3

Indiana University, Bloomington, Indiana, USA — Aug 2008 – Jan 2009
- Intensive English Program (IEP)

Seoul National University, Seoul, Korea — Mar 2005 – Feb 2013
- B.S. in Computer Science and Engineering
- B.S. in Statistics (Double Major)
- Thesis: Prediction of Customer's Follow-on Purchase using Ensemble Methods
- Total GPA: 3.57 / 4.3

RESEARCH EXPERIENCE

Vision and Learning Lab., Seoul National University — Mar 2020 – Current
- Postdoctoral Researcher
  - Advisor: Prof. Gunhee Kim
  - Projects: Computer Vision (Weakly Supervised Object Localization, etc.), Medical AI

Vision and Learning Lab., Seoul National University — Mar 2015 – Feb 2020
- Graduate Research Assistant
  - Advisor: Prof. Gunhee Kim
  - Projects: Computer Vision (Object Detection, Semantic Segmentation, etc.), Medical AI

Medical Research Center for Innovation, Seoul National University Hospital — Jan 2016 – Aug 2016
- Visiting Researcher
  - Advisor: Prof. Yon Su Kim
  - Projects: Medical AI

Structural Complexity Lab., Seoul National University — Mar 2013 – Feb 2015
- Graduate Research Assistant
  - Advisor: Prof. Robert Ian McKay
  - Projects: Genetic Algorithm, Medical AI

PUBLICATIONS

[9] **Junhyug Noh**, Wonho Bae, Wonhee Lee, Jinhwan Seo and Gunhee Kim, "Better to Follow, Follow to Be Better: Towards Precise Supervision of Feature Super-Resolution for Small Object Detection," in *IEEE International Conference on Computer Vision (**ICCV 2019**)*, Seoul, Korea, Nov 2019.

[8] Kangil Kim, Dong-Kyun Kim, **Junhyug Noh**, and Minhyeok Kim, "Stable Forecasting of Environmental Time Series via Long Short Term Memory Recurrent Neural Network," *IEEE Access*, vol. 6, no. 1, pp. 75216–75228, Dec 2018. (**SCI**)

[7] Kangil Kim, **Junhyug Noh**, Dong-Kyun Kim, and Minhyeok Kim, "Conflict Relaxation of Activation-Based Regularization for Neural Network," *IEEE Access*, vol. 6, no. 1, pp. 52510–52518, Sep 2018. (**SCI**)

[6] **Junhyug Noh**, Soochan Lee, Beomsu Kim, and Gunhee Kim, "Improving Occlusion and Hard Negative Handling for Single-Stage Pedestrian Detectors," in *IEEE Conference on Computer Vision and Pattern Recognition (**CVPR 2018**)*, Salt Lake City, Utah, USA, Jun 2018.

[5] **Junhyug Noh***, Kyung Don Yoo*, Hajeong Lee, Dong Ki Kim, Chun Soo Lim, Young-Hoon Kim, Jung Pyo Lee, Gunhee Kim, and Yon Su Kim, "A Machine Learning Approach Using Survival Statistics to Predict Graft Survival in Kidney Transplant Recipients: A Multicenter Cohort Study," *Nature Scientific Reports*, vol. 7, no. 1, pp. 8904, Aug 2017. (**SCI**, *Equal contribution)

[4] Kyung Don Yoo, Clara Tammy Kim, Myoung-Hee Kim, **Junhyug Noh**, Gunhee Kim, Ho Kim, Jung Nam An, Jae Yoon Park, Hyunjeong Cho, Kyoung Hoon Kim, Hyunwook Kim, Dong-Ryeol Ryu, Dong Ki Kim, Chun Soo Lim, Yon Su Kim, and Jung Pyo Lee, "Superior Outcomes of Kidney Transplantation Compared with Dialysis," *Medicine*, vol. 95, no. 33, e4352, Aug 2016. (**SCI**)

[3] **Junhyug Noh**, Dharani Punithan, Hajeong Lee, Jung Pyo Lee, Yon Su Kim, Dong Ki Kim, and Robert Ian McKay, "Machine Learning Models and Statistical Measures for Predicting the Progression of IgA Nephropathy," *International Journal of Software Engineering and Knowledge Engineering*, vol. 25, no. 5, pp. 829–849, Jun 2015. (**SCIE**)

[2] **Junhyug Noh**, Dharani Punithan, Hajeong Lee, Jung Pyo Lee, Yon Su Kim, Dong Ki Kim, and Robert Ian McKay, "Predicting the Progression of IgA Nephropathy using Machine Learning Methods," in *International Conference on Bio-inspired Information and Communications Technologies (**BICT 2014**)*, Boston, Massachusetts, USA, Dec 2014. (**Oral**)

[1] Wonhee Choe, Hyo-Sun Chun, **Junhyug Noh**, Seong-Deok Lee, and Byoung-Tak Zhang, "Estimating Multiple Evoked Emotions from Videos," in *Annual Meeting of the Cognitive Science Society (**CogSci 2013**)*, Berlin, Germany, Aug 2013.

AWARDS & SCHOLARSHIPS

Excellent Award of Doctoral Degree Thesis Feb 2020
- Selected as the best doctoral thesis by Department of Computer Science and Engineering, Seoul National University.

Kakao Travel Grants Dec 2019
- Grant recipient for attending AAAI 2020 (New York, USA) as a part of Kakao Inc's research-support program

Naver Ph.D. Fellowship Award Nov 2018
- Awarded to outstanding graduate students in the computer Science field for one's exceptional academic research.

Excellent Award of Master Degree Thesis Feb 2015
- Selected as the best master's thesis by Department of Computer Science and Engineering, Seoul National University.

National Scholarship for Science and Engineering Mar 2005 – Jun 2011
- Funded full-tuition scholarship with stipend for undergraduate studies by Korea Student Aid Foundation (KOSAF).

WORK EXPERIENCE

Kakao Mobility Corp., Seongnam, Korea Jun 2018 – Aug 2018
- Research Intern
  - Developed a number plate detection and recognition model.

Rolling Heads Inc., Seoul, Korea Feb 2013 – Mar 2014
- Technical Advisor
  - Developed a matching algorithm of social dating applications using a genetic algorithm.

TEACHING EXPERIENCE

Teaching Assistant and **Guest Lecturer**, Seoul National University Mar 2013 – Dec 2016
- M1522.001000 Computer Vision (Instructor: Gunhee Kim)
- 4190.773 Probabilistic Graphical Models (Instructor: Gunhee Kim)
- 4190.429 Image Processing (Instructor: Gunhee Kim)
- 4190.680 Knowledge Representation and Reasoning (Instructor: Robert Ian McKay)
- 4190.569 Technical Writing for Computer Engineers (Instructor: Robert Ian McKay)
- 4190.425 Advanced Artificial Intelligence (Instructor: Robert Ian McKay)

- 4190.101 Discrete Mathematics (Instructor: Robert Ian McKay)

Instructor, SNU/SK Big Data Academy Jun 2016 – Sep 2017
- Conducted courses in deep learning.
- Topics: TensorFlow, Convolutional Neural Networks, Object Detection, etc.

Mentor, Samsung Convergence Software Course (SCSC) Aug 2015 – Jun 2016
- Worked as a mentor to support undergraduate students taking CSE major courses.

PROFESSIONAL ACTIVITIES

Reviewer
- International Journal of Computer Vision (IJCV)
- European Conference on Computer Vision (ECCV) 2020

OTHER EXPERIENCE

Military Service Jul 2006 – Jul 2008
602nd Battalion, 2nd Aviation Brigade, Army Aviation Operations Command, Chungbuk, Korea
- Had honorable discharge as a sergeant and fulfilled military duty.

SKILLS

Programming Languages. Python, R, C/C++, Java, Shell scripts (bash, zsh), Matlab, Ocaml
ML/DL Frameworks. TensorFlow, PyTorch, Caffe
Operating Systems. Linux (Ubuntu), macOS
Other Tools and Skills. Git, Latex, Vim

[*Last update: 20 Mar 2020*]