

PROMOTION RECOMMENDATION
The University of Michigan
College of Engineering
Department of Electrical Engineering and Computer Science

Honglak Lee, assistant professor of electrical engineering and computer science, Department of Electrical Engineering and Computer Science, College of Engineering, is recommended for promotion to associate professor of electrical engineering and computer science, with tenure, Department of Electrical Engineering and Computer Science, College of Engineering.

Academic Degrees:

Ph.D. 2010 Stanford University, Computer Science, Stanford, CA
M.S. 2006 Stanford University, Computer Science, Stanford, CA
M.S. 2006 Stanford University, Applied Physics, Stanford, CA
B.S. 2003 Seoul National University, Physics and Computer Science, Seoul, South Korea

Professional Record:

2010 – present Assistant Professor, Department of Electrical Engineering and Computer Science, University of Michigan
1999 – 2002 Software Engineer, ECO Co. Ltd., Seoul, Korea

Summary of Evaluation:

Teaching: Professor Lee is an inspiring, dedicated, and versatile instructor who has successfully taught a broad spectrum of courses, ranging from a large introductory core course on discrete mathematics (EECS 203), to an upper-level elective on machine learning (EECS 445), and a graduate-level course on machine learning (EECS 545). Professor Lee has established a vigorous research group and has already graduated one Ph.D. student and has another five in progress. In addition, he has served as a committee member for another 11 Ph.D. students. Professor Lee is also very active advising several M.S. students and directing undergraduate major projects.

Research: Professor Lee's research is in the field of Deep Learning, or more generally representation learning. In less than a decade, Deep Learning has become the state-of-the-art in speech recognition, computer vision, and is increasingly making inroads into robotics and natural language processing. Professor Lee has a very strong record of publication at the top venues in artificial intelligence and machine learning. Several of his many conference and journal publications appear in what are considered top-tier venues. His work has been recognized by an NSF CAREER award and two best paper awards. His research receives support from federal agencies and industry, including ARO, NSF, ONR, Bosch, IBM, Mitsubishi, Proctor and Gamble, and Samsung, with funding to date totaling more than \$3.1 million.

Recent and Significant Publications:

Scott Reed, Yi Zhang, Yuting Zhang and Honglak Lee, "Deep Visual Analogy-Making," in

- Advances in Neural Information Processing Systems (NIPS)* 28, 2015.
- Yuting Zhang, Kihyuk Sohn, Ruben Villegas, Gang Pan and Honglak Lee, "Improving Object Detection with Deep Convolutional Networks via Bayesian Optimization and Structured Prediction," in the *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2015.
- Kihyuk Sohn, Wenling Shang and Honglak Lee, "Improved Multimodal Deep Learning with Variation of Information," in *Advances in Neural Information Processing Systems (NIPS)* 27, 2014.
- Scott Reed, Kihyuk Sohn, Yuting Zhang and Honglak Lee, "Learning to Disentangle Factors of Variation with Manifold Interaction," in *Proceedings of 31st International Conference on Machine Learning (ICML)*, 2014.
- Forest Agostinelli, Michael Anderson and Honglak Lee, "Adaptive Multi-Column Deep Neural Networks with Application to Robust Image Denoising," in *Advances in Neural Information Processing Systems (NIPS)* 26, 2013.
- Kihyuk Sohn, Guanyu Zhou, Chansoo Lee and Honglak Lee, "Jointly Learning and Selecting Features via Conditional Point-wise Mixture RBMs," in *Proceedings of 30th International Conference on Machine Learning (ICML)*, 2013.
- Guanyu Zhou, Kihyuk Sohn and Honglak Lee, "Online Incremental Feature Learning with Denoising Autoencoders," in *Proceedings of the 15th International Conference on Artificial Intelligence and Statistics (AISTATS), JMLR W&CP 22*, 2012.

Service: Professor Lee's service, both internally and externally, is notable. He has served as an academic advisor for our undergraduate students, and has participated in the committees that developed the new Data Science undergraduate degree and the new Data Science graduate certificate. He also has led student workshops on the NSF graduate fellowship process, and has developed a machine learning algorithm for predicting acceptance rates of admitted graduate students based on data from previous years. Externally, Professor Lee has served on several top-tier program committees. He currently serves as an editorial board member for *Neural Networks* and is a reviewer for several journals in his field.

External Reviewers:

Reviewer A: "...Honglak Lee is an exceptionally strong researcher. He is one of the pioneers of deep learning and I have no doubt he will continue to be a leader in the machine learning community going forward."

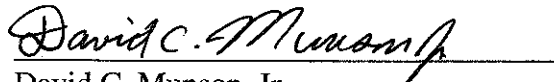
Reviewer B: "...he is with no doubt one of few rising stars of the deep learning field and more broadly, he will help push the frontier of machine learning and computer vision in years to come."

Reviewer C: "Honglak is without any doubt one of the brightest and most promising stars in the field of deep learning. In fact, most of the tremendous success of this nascent field is attributable to Honglak's pioneering work . . . Honglak is one of the most promising researchers in machine learning in the world. He has already made many important key contributions . . . he will likely continue to innovate in very profound and impactful ways. He is a true leader."

Reviewer D: "...Honglak Lee has been doing excellent research that has significantly advanced the state-of-the-art in deep learning. He has produced impressive applications in both vision and speech and is currently applying deep learning to a wide variety of interesting application areas. He is clearly one of the best deep learning researchers of his cohort..."

Reviewer E: "We need him in Academia to train the next generation of deep learning researchers. If he were not at Michigan, I would be hard pressed to name another card-carrying member of the academic deep learning community in his seniority class."

Summary of Recommendation: Professor Lee has established a highly successful record of teaching, scholarly research, and service at the University of Michigan. It is with the support of the College of Engineering Executive Committee that I recommend Honglak Lee for promotion to associate professor of electrical engineering and computer science, with tenure, Department of Electrical Engineering and Computer Science, College of Engineering.



David C. Munson, Jr.
Robert J. Vlastic Dean of Engineering
College of Engineering

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