



Prof. Taesup Moon

- **Education**
  - Ph.D. in Electrical Engineering, Stanford University, 2008
  - M.S. in Electrical Engineering, Stanford University, 2004
  - B.S. in Electrical Engineering, Seoul National University, 2002
- **Experience**
  - 2021-current, Associate Professor, Seoul National University
  - 2017-2021, Assistant/Associate Professor, Sungkyunkwan University
  - 2015-2017, Assistant Professor, DGIST
  - 2013-2015, Research Staff Member, Samsung Advanced Institute of Technology (SAIT)
  - 2012-2013, Postdoctoral Scholar, UC Berkeley Statistics
  - 2008-2012, Scientist, Yahoo! Labs
- **Research Interests**
  - Machine Learning, Big Data, Data Science

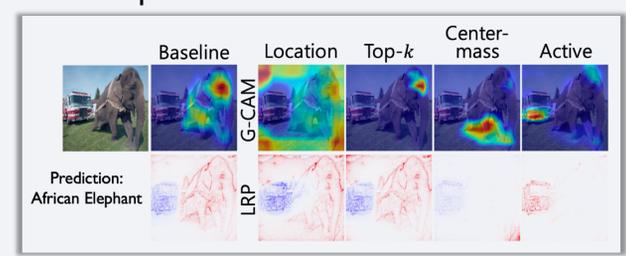
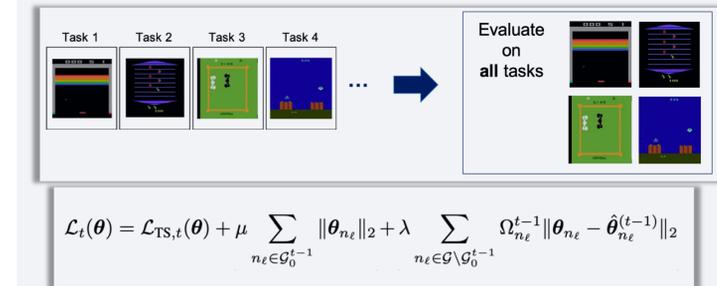
## Recent Publications (Selected)

- **Top CS conferences**
  - D. Lee, S. Jung, T. Park, and T. Moon, "Fair Feature Distillation for Visual Recognition", **CVPR 2021**
  - J. Byun, S. Cha, and T. Moon, "FBI: Fast Blind Image Denoiser for Source-Dependent Noise", **CVPR 2021**
  - S. Cha, H. Hsu, T. Hwang, F. P. Calmon, and T. Moon, "CPR: Classifier-Projection Regularization for continual learning" **ICLR 2021**
  - S. Cha, T. Park, B. Kim, J. Baek, and T. Moon, "GAN2GAN: Generative Noise Learning for Blind Image Denoising with Single Noisy Images", **ICLR 2021**
  - S. Jung, H. Ahn, S. Cha, and T. Moon, "Continual Learning with Node-Importance based Adaptive Group Sparse Regularization", **NeurIPS 2020**
  - H. Ahn and T. Moon, "Iterative Channel Estimation for Discrete Denoising under Channel Uncertainty," **UAI 2020**
  - T. Park and T. Moon, "Unsupervised Neural Universal Denoiser for Finite-Input General-Output Noisy Channel," **AISTATS 2020**
  - H. Ahn, S. Cha, D. Lee and T. Moon, "Uncertainty-based Continual Learning with Adaptive Regularization," **NeurIPS 2019**
  - J. Heo, S. Joo, and T. Moon, "Fooling Neural Network Interpretations via Adversarial Model Manipulation," **NeurIPS 2019**
  - S. Cha and T. Moon, "Fully Convolutional Pixel Adaptive Image Denoiser," **ICCV 2019**
  - S. Joo, S. Cha, and T. Moon, "DoPAMINE: Double-sided Masked CNN for Pixelwise Adaptive Multiplicative Noise Despeckling," **AAAI 2019**
- **Journals**
  - D. Lee, H. Park, T. Moon, and Y. Kim, "Continual learning of Micro-Doppler signatures based human activity classification", **IEEE GRSL**, January 2021
  - J. Byun and T. Moon, "Learning blind pixelwise affine image denoiser with single noisy images", **IEEE SPL**, June 2020
  - L. Kohoutova, J. Heo, S. Cha, T. Moon, Tor D. Wager, and Choong-Wan Woo, "Interpreting machine learning models in neuroimaging: Towards a unified framework," **Nature Protocols** 2020
  - Y. Park, B. Kwon, J. Heo, X. Hu, Y. Liu, and T. Moon, "Estimating PM2.5 Concentration of the Conterminous United States via Interpretable Convolutional Neural Networks," **Environmental Pollution**, January 2020
  - B. Lee, T. Moon, S. Yoon, and T. Weissman, "DUDE-Seq: Fast, flexible, and robust denoising for targeted amplicon sequencing," **PLoS ONE**, July 2017
  - Y. Kim and T. Moon, "Human detection and activity classification based on micro-Dopplers using deep convolutional neural networks," **IEEE GRSL**, January 2016

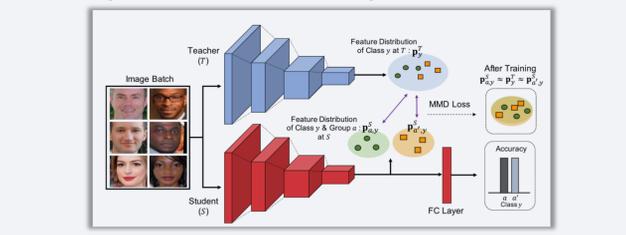
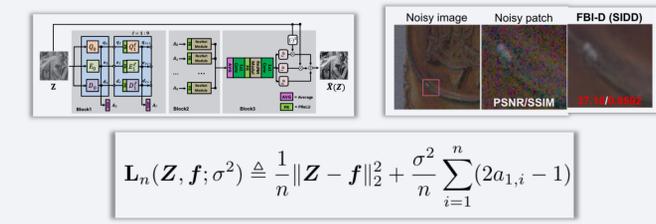
## Research Interests

### ◆ Core Algorithms

- Continual Learning / Incremental Learning
  - Regularization-based methods based on Bayesian / optimization principles
- Explainable AI / Adversarial Robustness
  - Develop new XAI or model that are robust to adversarial attack / model manipulations



- Denoising
  - Unsupervised/semi-supervised Learning based practical denoising algorithms
- Algorithmic Fairness
  - Utilize Knowledge Distillation (KD) to improve both accuracy and fairness



### ◆ Data Science Applications

- Air Quality Monitoring
  - Diagram showing a CNN model processing input data to estimate PM2.5 concentration.
- Semiconductor Random Variation Prediction
  - Diagram showing an ML-based Model (FinFET, GAAFET) predicting Drain Current (A/nm) vs Gate Voltage (V).

- Neuroscience
- Multi-modal Transformer & Applications

