Hao He

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EDUCATION

Massachusetts Institute of Technology, Cambridge, MA 2017 - present
Ph.D. in Computer Science
• Advisor: Prof. Dina Katabi GPA: 5.0/5.0

Peking University, China 2013 - 2017
B.S. in Computer Science
• Major GPA: 3.93/4.00 (rank 1st)

EXPERIENCE

Research Assistant, MIT Sep 2017 to Present
Advisor: Prof. Dina Katabi
Project: Deep Learning for Distributed Circuit Design
• Develope a graph neural network that can optimize high-frequency (THz) circuits.

Project: Learning Based Wireless Sensing for Health Care and Small Home
• Develope wireless fall detection system using 3D convolution networks.
• Develope wireless multiple people breathing monitoring system.

Research Intern, Microsoft Research Sep 2016 to Aug 2017
Mentor: David Wipf
Project: Neural Sparse Bayesian Learning Algorithm
• We propose a novel DL model that solves sparse matrix inverse problem efficiently.
• We develope a theory that map the classic Sparse Bayesian Learning algorithm to standard recurrent neural network cell.

Mentor: Stephen Lin
Project: White Box Photo Post-Processing Framework
• We develope a framework that automatically learns photo processing patterns for any given photo retouching style.

Research Intern, Stanford University June 2016 to Sep 2016
Advisor: Leonidas J. Guibas
Project: 3D Shape Reconstruction via Single Image
• Develope a generative model that generates 3D point cloud conditioned on a 2D image.

PUBLICATION

Circuit-GNN: Graph Neural Networks for Distributed Circuit Design
Hao He*, Guo Zhang*, Dina Katabi
International Conference on Machine Learning (ICML 2019)

ProbGAN: Towards Probabilistic GAN with Theoretical Guarantees
Hao He, Hao Wang, Guang-He Lee, Yonglong Tian
International Conference on Learning Representations (ICLR), 2019

Hierarchical Bidirectional Inference Networks for Health Profiling
Hao Wang, Chengzhi Mao, **Hao He**, Dina Katabi, Tommi jaakkola
The Thirty-Third AAAI Conference on Artificial Intelligence (AAAI), 2019

RF-Based Fall Monitoring Using Convolutional Neural Networks
Hao He*, Yonglong Tian*, Guang-he Lee*, Dina Katabi, Chen-yu Hsu
ACM International Joint Conference on Pervasive and Ubiquitous Computing, 2018

Extracting Multi-Person Respiration from Entangled RF Signals
Shichao Yue, **Hao He**, Dina Katabi
ACM International Joint Conference on Pervasive and Ubiquitous Computing, 2018

Exposure: A White-Box Photo Post-Processing Framework
Yuanming Hu, **Hao He**, Chenxi Xu, Baoyuan Wang, Stephen Lin
ACM Transactions on Graphics (TOG), 2018

From Bayesian Sparsity to Gated Recurrent Nets
Hao He, Bo Xin, Satoshi Ikehata, David Wipf
Conference on Neural Information Processing Systems (NeurIPS), 2017 *(Oral presentation)*

SERVICES

Reviewer: NeurIPS 19, ICML 19
Program Committee: AAAI 20, UAI 19

COURSES

System: Computer Network (6.892) (A+)
AI: Algorithm for Inference (6.438) (A), Information and Inference (6.437) (A), Fundamentals of Probability(6.436) (A), Bayesian Modelling and Inference (6.882) (A)
Theory: Learning-Augmented Algorithms (6.890) (A)

AWARDS

- National Scholarship for Excellent Academic Performance, China (highest, twice)
- Arawana Scholarship for Excellent Academic Performance, Peking University
- ACM-ICPC 2015 Asia Regional Shenyang Site, Gold Medal
- ACM-ICPC 2014 Asia Regional Anshan Site, Gold Medal