# 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
• Develop a graph neural network model that optimizes high-frequency (THz) circuits.

Project: Learning-Based Wireless Sensing for Health Care and Smart Home
• Develop a wireless fall detection system that generalizes to new homes and new people.
• Build the first RF breathing monitoring system that works in multiple people scenarios.

**Research Intern, Microsoft Research** — Sep 2016 to Aug 2017
Mentor: David Wipf
Project: Neural Sparse Bayesian Learning Algorithm
• Propose a novel DL model that solves sparse matrix inverse problem efficiently.
• Develop 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
• Develop a framework that automatically learns the photo processing patterns for any given photo retouching style.

## PUBLICATION

**Learning Compositional Koopman Operators for Model-Based Control**
Yunzhu Li*, **Hao He***, Jiajun Wu, Dina Katabi, Antonio Torralba
International Conference on Learning Representations (ICLR), 2020

**Learning Caching Policies with Subsampling**
Haonan Wang, **Hao He**, Mohammad Alizadeh, Hongzi Mao
Machine Learning for Systems Workshop, NeurIPS, 2019

**Towards Safe Online Reinforcement Learning in Computer Systems**
Hongzi Mao, Malte Schwarzkopf, **Hao He**, Mohammad Alizadeh
Machine Learning for Systems Workshop, NeurIPS, 2019

**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

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

**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

## SERVICES

**Reviewer:** ICML 20, NeurIPS 19, ICML 19
**Program Committee:** UAI 20, IJCAI 20, AAAI 20, UAI 19
**Workshop Reviewer or PC member:** NeurIPS 19 Reproducibility Challenge, NeurIPS 19 Graph Representation Learning, AAAI 20 AI for Social Impact, ICML 18 Theoretical Foundations and Applications of Deep Generative Models,

## 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), An Algorithmist's Toolkit (18.408) (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