# HAOWEN XU

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## EDUCATION

**B.Eng** **Tsinghua University,** Biomedical Engineering, *September 2013 - July 2017*
GPA: 90.3/100, Ranking: 2/29

**Exchange** **Washington University in St. Louis,** *August 2015 - December 2015*
GPA: 4.0/4.0

## RESEAARCH INTERESTS

Reinforcement Learning, Meta-Learning, Curriculum Learning, Multi-task learning, Sequential Decision Making, Graphical Models, Interpretable ML.

Applications in healthcare, biology, medicine, natural language and general AL.

## PUBLICATION

[1] **Haowen Xu, Hao Zhang, Zhiting Hu, Xiaodan Liang, Ruslan Salakhutdinov, Eric Xing. AutoLoss: Learning Discrete Schedule for Alternate Optimization.** ***Submitted to ICLR 2019***

## RESEARCH EXPERIENCE

**Research Intern,** SAILING LAB, Carnegie Mellon University July 2018 - present
*Advisor:* **Prof. Eric Xing**

- Proposed a meta-learning framework, AutoLoss, that automatically learns and determines the schedule of optimization processes, which can improve the convergence of iterative and alternate training such as GAN, multi-task learning and curriculum learning.
- paper

**Algorithm Engineer,** deeplycurious.ai, Beijing September 2017 - February 2018

- Developed an attention based sequence labeling model and applied it to a Chinese Named Entity Recognition task.
- Achieved a state of the art result on MSRA bakeoff3 dataset and a comparable result on the company's internal dataset while inferencing much faster than bi-LSTM baseline.

**Algorithm Engineer,** deeplycurious.ai, Beijing September 2017 - February 2018

- Proposed a document classification model with a paragraph reasoning module in order to resolve feature conflicts between paragraphs.
- Applied hierarchical supervision strategy to exploit multi-granularity label supervision.

Laboratory of Auditory Neurophysiology, Johns Hopkins University August 2016 - May 2017
*Advisor:* **Prof. Xiaoqin Wang**

- Developed an automatic recording and analyzing system for animal vocalization behavior study. I was mainly responsible for applying deep machine learning to our analyzing algorithm.
- Challenged the common problems (e.g. insufficient data, unstable recording system, big individual variance) when applied deep learning methods to biomedical areas.

Laboratory of Auditory Neurophysiology, Johns Hopkins University July 2016 - August 2016
*Advisor:* **Prof. Xiaoqin Wang**

- Applied polarized light to intrinsic imaging system to improve imaging depth and built a simulation model to verify our theoretical results.

Molecular Bioelectricity Lab, Washington University in St. Louis August 2015 - December 2015
*Advisor:* **Prof. Jianming Cui**

- Built a kinetic model to represent the VSD-pore coupling in KCNQ1 channel
- Applied drug scanning method to find potential $Ca^{2+}$ binding sites on BK channel.
- Received training in basic bioelectrical experiment skills such as voltage-clamp, patch-clamp, cell culturing and virus infection.

Fluorescence Molecular Imaging Lab, Tsinghua University February 2015 - August 2015
*Advisor:* **Prof. Jing Bai**

- Developed the control system for our fluorescence molecular temperature imaging system.

## AWARDS

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| **2017** | Tsinghua Outstanding Undergraduate. (60 out of 3000+ students at Tsinghua University) |
| **2016** | Scholarship for Integrated Excellence. (Top 5% at Tsinghua University) |
| **2015** | Scholarship for Academic Excellence. (Top 5% at Tsinghua University) |
| **2015** | Honorable Mention Price in China Undergraduate Mathematical Contest in Modeling. |
| **2014** | Silver Trophy in Tsinghua Students Summer Practice. (Top 20 at Tsinghua University) |
| **2014** | The Second Place in Medical Instrument Creative Design Contest. |

## TECHNICAL & LANGUAGE

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| **Programming Languages** | Proficient in Python, Matlab, C/C++ |
| | Familiar with Java, R, Verilog, VHDL, LabView |
| **English** | TOEFL iBT: 106 |
| | GRE Verbal: 153, Quantitative: 168 |