

# RONGYAO FANG

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## EDUCATION

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### Shanghai Jiao Tong University

*Sept. 2016 - Present*

Undergraduate, Dept. of EE, School of Electronic Information and Electrical Engineering.

Zhiyuan Honors Program of Engineering (An elite program for TOP 5% students in Shanghai Jiao Tong University).

**Major:** Electronic Engineering (Artificial Intelligence track).

**Overall GPA:** 92.16/100 or 4.00/4.3, Ranking: **1<sup>st</sup>/158**

**Research:** Independent researcher in Prof. Bingbing Ni's group.

### Massachusetts Institute of Technology

*July 2019 - Present*

**Research:** Visiting scholar under the supervision of Prof. Dina Katabi in CSAIL.

### University of Washington, Seattle

*July 2017 - Aug. 2017*

Exchange program in Department of Electrical & Computer Engineering, University of Washington.

**Overall GPA:** 3.86/4.0

## RESEARCH INTERESTS

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My research interests lie in computer vision and deep learning, particularly 3D computer vision and medical imaging, as well as the application in wireless sensing and adversarial example. I am open to exploring other interesting topics.

## PUBLICATION

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### Anonymous Submission

Advisor: **Dina Katabi**

**Rongyao Fang\***, Tianhong Li\*, Lijie Fan\*, Rumen Hristov, Dina Katabi.

Area: Application of 3D computer vision in wireless data.

To be submitted to **CVPR 2020**.

### Probabilistic Radiomics: Ambiguous Diagnosis with Controllable Shape Analysis

Jiancheng Yang\*, **Rongyao Fang\*** (equal contribution), Bingbing Ni, etl.

Advisor: **Bingbing Ni**

The 22nd International Conference on Medical Image Computing and Computer Assisted Intervention (**MICCAI**), 2019. (Early Acceptance)

### Adversarial Attack and Defense on Point Sets

Advisor: **Bingbing Ni**

Jiancheng Yang\*, Qiang Zhang\*, **Rongyao Fang\*** (equal contribution), Bingbing Ni, Jinxian Liu, Qi Tian.

In submission to **IEEE TIFS**. (**Arxiv**)

## RESEARCH PROJECTS

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### Learnable and Explainable *Probabilistic Radiomics*

*July 2018 - March 2019*

- Developed a novel CNN-based 3D classification and segmentation model on lung nodule.
- Proposed *probabilistic radiomics: DenseSharp<sup>+</sup>*, which has comparable performance with the most successful models and is controllable and explainable.
- Leveraged available training data with ambiguity labels to train explainable deep networks for computer-aided lung nodule diagnosis.
- First authored paper early accepted by **MICCAI 2019**.

### Adversarial Attack and Defense on 3D Point Cloud Data

*July 2018 - Jan. 2019*

- Proposed three novel 3D point cloud attack operations which reduced the accuracy of PointNet to 0%.
- Developed a flexible *perturbation-measurement* scheme for point cloud data to detect specific potential adversarial samples with a ratio of 95.21%.

- Achieved the transferability of adversarial samples between different point cloud networks and between CNNs and point cloud nets.
- First authored paper submitted to **IEEE TIFS**.

### **Human Motion Transfer by Aligning Component**

*July 2018 - Nov. 2018*

- Proposed a method of human articulated motion transfer based on Dense Pose.
- Applied the conditional variational autoencoder to transfer texture details.

## **HONORS AND AWARDS**

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### **National Scholarship**

*2017 & 2018*

TOP 1%, Ministry of Education of P.R.China.

### **Zhiyuan College Honors Scholarship**

*2017 & 2018*

TOP 5%, Zhiyuan College, Shanghai Jiao Tong University.

### **First Prize of Undergraduate Physics Contest, Shanghai Division**

*Oct. 2017*

Shanghai Physical Society.

### **Tang-Lixing Scholarship**

*Oct. 2018*

TOP 1 student in School of Electronic Information and Electrical Engineering.

### **First Prize of Academic Excellence Scholarship**

*Nov. 2018*

TOP 1%, Shanghai Jiao Tong University.