# Siyuan Shan

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Research Interests: Meta Learning, Set Modeling, Generative Adversarial Networks, Time Series Analysis

## EDUCATION

**University of North Carolina at Chapel Hill**  — Chapel Hill, NC
*PhD in Computer Science*  — *Aug. 2018 – May 2023*

**Beihang University**  — Beijing, China
*Bachelor in Biomedical Engineering*  — *Aug. 2013 – May 2017*

**Czech Technical University in Prague**  — Prague, Czech Republic
*Exchange Student*  — *Aug. 2015 – Jan 2016*

## PUBLICATION

**Siyuan Shan**, Junier Oliva. "NRTSI: Non-Recurrent Time Series Imputation for Irregularly-sampled Data," in *Arxiv* 2021.

**Siyuan Shan**, Yang Li, Junier Oliva. "Meta-Neighborhoods," in *Neural Information Processing Systems (NeurIPS)* 2020.

Yang Li, Haidong Yi, Christopher M Bender, **Siyuan Shan**, Junier Oliva. "Exchangeable Neural ODE for Set Modeling," in *Neural Information Processing Systems (NeurIPS)* 2020.

Meijun Liu, Jicong Zhang, Wenxiao Jia, Qi Chang, **Siyuan Shan**, Yegang Hu, Dangxiao Wang. "Enhanced executive attention efficiency after adaptive force control training: behavioural and physiological results," in *Behavioural Brain Research* 2019.

**Siyuan Shan**, Yi Ren. "Automatic Audio Tagging with 1D and 2D Convolutional Neural Networks" in *Detection and Classification of Acoustic Scenes and Events* 2018.

Yan Xu, **Siyuan Shan**, Ziming Qiu, Zhipeng Jia, Zhengyang Shen, Yipei Wang, Mengfei Shi, I Eric, Chao Chang. "End-to-end subtitle detection and recognition for videos in East Asian languages via CNN ensemble," in *Signal Processing: Image Communication* 2018.

**Siyuan Shan**, Wen Yan, Xiaoqing Guo, Eric I-Chao Chang, Yubo Fan, Yan Xu. "Unsupervised end-to-end learning for deformable medical image registration," in *Arxiv* 2017.

## EXPERIENCE

**Graduate Researcher**  — Aug 2018 – now
*Advisor: Junier Oliva*  — *Chapel Hill, NC*

- Working on time series imputation, our model achieves SOTA performance and I will submit a paper to ICML 2021
- Develop a meta learning approach to achieve better discriminative learning performance across a wide range of classification and regression tasks
- Work on set modeling with Neural Ordinary Differential Equation (ODE) for point cloud classification, generation and temporal point cloud modeling

**Research Intern at ByteDance AI Lab**  — May 2020 – Aug 2020
*Advisor: Jitong Chen*  — *Mountain View, CA*

- Extending GANSynth for flexible instrument sound generation by interpreting the latent space of GAN
- Our model can control several key aspects of the generated sounds, such as velocity, duration, distortion and reverb

**Kaggle Freesound General-Purpose Audio Tagging Challenge**  — Mar 2018 – May 2018
*Advisor: Yi Ren*  — *Beijing, China*

- Combine 1D ConvNets to process raw audio and 2D ConvNets to process Mel Spectrogram for audio classification
- Our team ranked 16/558 (top 3%) among all participants

**Undergraduate Research Assistant** <span style="float:right">May 2016 – July 2017</span>

*Advisor: Yan Xu* <span style="float:right">*Beijing, China*</span>

- Work on unsupervised medical image registration using U-Net and Spatial Transformer Network
- Work on video subtitle detection based on color histogram and recognition using CNNs

**Undergraduate Research Assistant** <span style="float:right">Feb 2016 – Apr 2016</span>

*Advisor: Jicong Zhang* <span style="float:right">*Beijing, China*</span>

- Work on a project of exploiting patterns that are indicative of sustained attention from EEG data

## TECHNICAL SKILLS

**Languages**: Python, C/C++, MATLAB, Latex
**Deep Learning Frameworks**: Pytorch, TensorFlow, Keras, Caffe

## ACTIVITIES

Reviewer for NeurIPS 2019 Workshop on Sets & Partitions
Ranked 16/558 (top 3%) Kaggle Freesound General-Purpose Audio Tagging Challenge

## AWARDS

Outstanding Graduates of Beihang University, 2017
National Scholarship, 2015