

# Kun Su

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I am a **third-year** PhD student in the department of Electrical & Computer Engineering at University of Washington NeuroAI Lab advised by Prof. Eli Shlizerman. My research interests are **deep learning, computer vision, and audio/music application**. I have multiple publications in top AI conferences such as **NeurIPS** and **CVPR**. Besides academic experience, I was a research intern in Adobe Research (summer 2021).



## Research Interests

**Audio-Visual Learning:** video to audio/audio to video generation, cross-modal representation learning  
**Computer Vision:** 2D/3D pose/face, motion prediction, action recognition, temporal segmentation.



## Education

**Apr 2019 - Current** **Ph.D.: Electrical & Computer Engineering**

*University of Washington - Seattle, WA*

1. Current GPA: 3.90
2. Passed Quals: Fall 2020
3. Expected Graduation Date: Spring 2023

**Sep 2017 - Apr 2019** **Master of Science: Electrical & Computer Engineering**

*University of Washington - Seattle, WA*

1. Graduated with 3.92 GPA

**Aug 2013 - May 2017** **Bachelor of Science: Electrical Engineering**

*Rensselaer Polytechnic Institute - Troy, NY*

1. Graduated magna cum laude
2. Graduated with 3.76 GPA



## Work History

**Jun 2021 - Sep 2021** **Audio Research Intern**

*Adobe Research, Seattle, WA*

1. Learning visual styles from talking head videos (Mentor: Xue Bai)

**Jun 2016 - Aug 2016** **Robotic Simulation Intern**

*SUNPRO Mechanical & Electrical Engineering, Guangzhou, China*

1. Design a visual system to evaluate the welded components in the Nissan assembly line.



## Publications

### Conferences (CVPR, NeurIPS, ACC, URTC)

1. Su, Kun, Xiulong Liu, and Eli Shlizerman. "How Does it Sound?" *Advances in Neural Information Processing Systems (NeurIPS) (2021)*
2. Su, Kun, Xiulong Liu, and Eli Shlizerman. "Audeo: Audio generation for a silent performance video." *Advances in Neural Information Processing Systems (NeurIPS)* 33 (2020).
3. Su, Kun, Xiulong Liu, and Eli Shlizerman. "Predict & cluster: Unsupervised skeleton based action recognition." *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*. 2020.
4. You, Jie, Yufei Zhang, Mingchen Li, Kun Su, Fumin Zhang, and Wencen Wu. "Cooperative parameter identification of advection-diffusion processes using a mobile sensor network." In *2017 American Control Conference (ACC)*, pp. 3230-3236. IEEE, 2017.
5. Li, M., Su, K., Zhang, Y., You, J. and Wu, W., 2016, November. *Experimental validation of diffusion coefficient identification using a multi-robot system*. In *2016 IEEE MIT Undergraduate Research Technology Conference (URTC)* (pp. 1-4). IEEE.

### Journal

6. Su, Kun, and Eli Shlizerman. "Clustering and Recognition of Spatiotemporal Features through Interpretable Embedding of Sequence to Sequence Recurrent Neural Networks." *Frontiers in Artificial Intelligence* 3 (2020): 70.
7. Wu, W., You, J., Zhang, Y., Li, M. and Su, K., 2020. *Parameter Identification of Spatial–Temporal Varying Processes by a Multi-Robot System in Realistic Diffusion Fields*. *Robotica*, pp.1-20.

### Workshops

8. Su, Kun, and Eli Shlizerman. "Dimension reduction approach for interpretability of sequence to sequence recurrent neural networks." *Understanding and Improving Generalization in Deep Learning, ICML 2019 Workshop*.

### Submitted

9. Su, Kun, Xiulong Liu, and Eli Shlizerman. "Multi-instrumentalist Net: Unsupervised Generation of Music from Body Movements." (2020)
10. Zheng, Yang, Jinlin Xiang, Kun Su, and Eli Shlizerman. "BI-MAML: Balanced Incremental Approach for Meta Learning." *arXiv preprint arXiv:2006.07412* (2020).



## Media Coverage

1. University of Washington ECE News (Predict & Cluser)
2. University of Washington News (Audeo)
3. Tech Crunch (Audeo)



## Peer-Review

**Reviewer (workshop):** Real Neurons & Hidden Units at NeurIPS 2019.

**Reviewer (Journal):** Computer Vision and Image Understanding (CVIU)

**Reviewer:** IEEE Signal Processing Letters



## Teaching

1. Practical Introduction to Neural Networks (**Graduate TA**), ECE 596, University of Washington, 2019
2. Computer Components and Operations (**Undergraduate TA**), ECSE 2610, Rensselaer Polytechnic Institute, 2016



## Skills

Deep learning frameworks: Pytorch, TensorFlow

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Excellent

Python Library: NumPy, scikit-learn, OpenCV, Librosa

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Excellent

Languages: English, Chinese, Cantonese

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Excellent