

# RUIHAN YANG

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🌐 <https://buggyyang.github.io>

🎓 Ph.D. in Computer Science

## Research Interests

Generative Models   Neural Data Compression   Multimedia   Representation Learning

## Education

### Ph.D. in Computer Science

*University of California, Irvine*

2019 - 2025

### B.S. in Computer Science

*NYU Shanghai, New York University*

2014 - 2018

## Research Experience

### Research Intern

*Microsoft Azure AI, Microsoft, Redmond*

- Team: Cognitive Service Research & Voice AI
- Product-oriented research on audio guided video translation and talking avatar
- Full-time during the summer and Part-time after September

Jun 2024 - Mar 2025

### Research Intern

*Microsoft Research, Microsoft, Redmond*

- Team: Audio and Acoustic Research
- Audio-Visual joint synthesis using multi-modal diffusion models
- Drove research efforts towards publication, enhancing the group's profile in audio-visual technology innovation

Jun 2023 - Sep 2023

### Research Intern

*Qualcomm AI Research, Qualcomm, San Diego*

- Team: Neural Compression
- Led the development of a pioneering project on variable bitrate neural video compression
- Innovated adaptive video compression techniques, contributing to advancements in efficient data encoding

Jun 2021 - Sep 2021

### Research Assistant

*Computer Science, NYU Shanghai*

- Research: Neural Music Modeling/Generation
- Published two papers as lead author and one as co-author at ISMIR and NIME conferences

Jan 2018 - Jul 2019

### Affiliated Research Assistant

*Computational Material Science, NYU Shanghai*

- Research: Applied Machine Learning & Scientific Computing
- Co-authored two papers published in Nature Communications and Journal of Physics: Condensed Matter

Sep 2017 - Jul 2019

## Publications

\* denotes equal contribution

**AstroCompress: A benchmark dataset for multi-purpose compression of astronomical data**  
Tuan Truong\*, Rithwik Sudharsan\*, Yibo Yang, Peter Ma, **Ruihan Yang**, Stephan Mandt, Joshua S. Bloom  
ICLR, 2025

**Fast Samplers for Inverse Problems in Iterative Refinement Models**

Kushagra Pandey\*, **Ruihan Yang\*** and Stephan Mandt

NeurIPS, 2024

**Precipitation Downscaling with Spatiotemporal Video Diffusion**

Prakhar Srivastava, **Ruihan Yang**, Gavin Kerrigan, Gideon Dresdner, Jeremy McGibbon, Christopher Bretherton and Stephan Mandt

NeurIPS, 2024

**CMMD: Contrastive Multi-Modal Diffusion for Video-Audio Conditional Modeling**

**Ruihan Yang**, Hannes Gamper and Sebastian Braun

ECCV AVGenL Workshop, 2024

**Lossy Image Compression with Conditional Diffusion Model**

**Ruihan Yang** and Stephan Mandt

NeurIPS, 2023

**SC2 Benchmark: Supervised Compression for Split Computing**

Yoshitomo Matsubara, **Ruihan Yang**, Marco Levorato and Stephan Mandt

TMLR (Journal)

**Insights from Generative Modeling for Neural Video Compression**

**Ruihan Yang**, Yibo Yang, Joe Marino and Stephan Mandt

IEEE PAMI (Journal)

**Diffusion Probabilistic Modeling for Video Generation**

**Ruihan Yang**, Prakhar Srivastava and Stephan Mandt

Entropy (Journal)

**Supervised Compression for Resource-Constrained Edge Computing Systems**

Yoshitomo Matsubara, **Ruihan Yang**, Marco Levorato and Stephan Mandt

WACV, 2022

**Hierarchical Autoregressive Modeling for Neural Video Compression**

**Ruihan Yang**, Yibo Yang, Joe Marino and Stephan Mandt

ICLR, 2021

**PIANOTREE VAE: Structured Representation Learning for Polyphonic Music**

Ziyu Wang, Yiyi Zhang, Yixiao Zhang, Junyan Jiang, **Ruihan Yang**, Junbo Zhao and Gus Xia

ISMIR, 2020

**Deep Music Analogy Via Latent Representation Disentanglement**

**Ruihan Yang**, Dingsu Wang, Ziyu Wang, Tianyao Chen, Junyan Jiang and Gus Xia

ISMIR, 2019

**Inspecting and Interacting with Meaningful Music Representations using VAE**

**Ruihan Yang**, Tianyao Chen, Yiyi Zhang and Gus Xia

NIME, 2019

**The complex non-collinear magnetic orderings in  $Ba_2YO_6$ : A new approach to tuning spin-lattice interactions and controlling magnetic orderings in frustrated complex oxides**

Yue-wen Fang, **Ruihan Yang** and Hanghui Chen

Journal of Physics: Condensed Matter (Journal)

**A large modulation of electron-phonon coupling and an emergent superconducting dome in doped strong ferroelectrics**

Jiaji Ma, **Ruihan Yang**, and Hanghui Chen

Nature Communications (Journal)