Xiaoyu BIE | Résumé

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Education

Inria & University Grenoble-Alpes — **France**
PhD student in Computer Science — *2019–2023*

- Supervisors: Xavier Alameda-Pineda, Laurent Girin
- Research areas: deep generative model, speech modeling, human understanding

CentraleSupélec, University Paris-Saclay — **France**
M.Sc. in Signal and Image Processing (ATSI) — *2017–2018*

Institut d'Optique, University Paris-Saclay — **France**
Diplôme d'Ingénieur in Applied Optics — *2016–2018*

Huazhong University of Science and Technology — **China**
B.Sc. in Optical and Electronic Information — *2012–2016*

Experience

Meta AI

Facebook AI Research (FAIR Labs) — **Menlo Park, CA**
Research Intern — *Sep. 2022 – Jan. 2023*

- Intern Manager: Alexei Baevski
- Collaborators: Michael Auli, Wei-Ning Hsu, Apoorv Vyas
- Topic: Self-supervised learning on disentangled discrete latent representation for speech data

CEA-LIST

Library of Vision, Modelization and Localisation (LVML) — **Palaiseau, France**
Research Engineer — *Nov. 2018 – Nov. 2019*

- Work on a project of automatic modeling of underground pipework, using simultaneous localization and mapping (SLAM) and dense 3D reconstruction

Baidu Inc.

Autonomous Driving Group (ADU) — **Beijing, China**
R&D Intern — *Avr. 2018 – Aug. 2018*

- Study a particle filter based localization system (a sequential Monte Carlo method) for autonomous vehicles, using semantic landmarks from a multi-cameras system

French National Centre for Scientific Research (CNRS)

Charles Fabry Labratory — **Palaiseau, France**
Research Intern — *Jun. 2017 – Aug. 2017*

- Study a non-local means denoising algorithm in orthogonal state contrast (OSC) imaging system

Awards

2021: Bosch AIoT Scholarship (50 in China)

2021: Travel Grant to Interspeech 2021

2019: Recipient of the MIAI Ph.D. Fellowship, France

Skills

Software: Python (e.g. PyTorch), C++, Matlab, Latex

Language: Chinese (native), English (proficient), French (fluent)

Community Service

Reviewer

Conferences: CVPR'23, ICASSP'23, ACM MM'20-22

Journals: IEEE/ACM TASLP, Neural Networks

Publications

$*$ equal contribution, † corresponding author

Preprint

[U1]: **Xiaoyu Bie***, Wen Guo*, Simon Leglaive, Laurent Girin, Francesc Moreno-Noguer and Xavier Alameda-Pineda, "HiT-DVAE: Human Motion Generation via Hierarchical Transformer Dynamical VAE". (in submission)

[U2]: **Xiaoyu Bie***, Dexiong Chen*, Xiaodong Cun and Xi Shen, "Learning Discrete Representation with Optimal Transport Quantized Autoencoders". (in submission)

[U3]: Xiaoyu Lin, **Xiaoyu Bie**, Simon Leglaive, Xavier Alameda-Pineda and Laurent Girin, "Speech Modeling with a Hierarchical Transformer Dynamical VAE". (in submission)

Conference papers

[C1]: Wen Guo*, **Xiaoyu Bie***, Xavier Alameda-Pineda and Francesc Moreno-Noguer, "Multi-Person Extreme Motion Prediction", IEEE/CVF Conference on Computer Vision and Pattern Recognition (**CVPR**), 2022. [Paper] [Project page] [Code]

[C2]: **Xiaoyu Bie**, Laurent Girin, Simon Leglaive, Thomas Hueber and Xavier Alameda-Pineda, "A Benchmark of Dynamical Variational Autoencoders applied to Speech Spectrogram Modeling", Conference of the International Speech Communication Association (**Interspeech**), 2021. [Paper] [Project page] [Code]

Journal papers

[J1]: **Xiaoyu Bie**, Simon Leglaive, Xavier Alameda-Pineda and Laurent Girin, "Unsupervised Speech Enhancement using Dynamical Variational Auto-Encoders", IEEE/ACM Transactions on Audio, Speech and Language Processing (**TASLP**), vol. 30, pp. 2993-3007, 2022. [arXiv] [Paper] [Project page] [Code]

[J2]: Laurent Girin, Simon Leglaive, **Xiaoyu Bie**, Julien Diard, Thomas Hueber and Xavier Alameda-Pineda, "Dynamical Variational Autoencoders: A Comprehensive Review", Foundations and Trends in Machine Learning, 2021, Vol. 15, No. 1-2, pp 1–175. [arXiv] [Paper] [Project page] [Tutorial] [Code]