

Yuanbo Xiangli

Tel: (+852) 55341509 / (+86) 13811767475

Email: ambie.xlyb@gmail.com

EDUCATION

2019 – 2023 (expected)	The Chinese University of Hong Kong PhD in MMLab, Information Engineering
2017 – 2018	Oxford University MSc in Computer Science
2013 – 2017	University of Nottingham BSc Honors Computer Science

SHORT BIO

I am a 4th year (2019-) Ph.D student in Multimedia Lab, Information Engineering, CUHK, supervised by Prof. Dahua Lin. My research interest lies in 3D computer vision and deep generative modeling. Currently, I am working on photorealistic and efficient city scenes reconstruction, manipulation and generation based on multi-source data, including satellite imagery, oblique photography, street view panoramas and urban planning information. Find me at: <https://kam1107.github.io/>.

PUBLICATION

- [1] [Y. Xiangli](#), L. Xu, X. Pan, N. Zhao, A. Rao, C. Theobalt, B. Dai, D. Lin, “CityNeRF: Building NeRF at City Scale”, arXiv preprint arXiv: 2112.05504, 2021.
- [2] L. Xu, [Y. Xiangli](#), A. Rao, N. Zhao, B. Dai, Z. Liu, D. Lin, “BlockPlanner: City Block Generation with Vectorized Graph Representation,” in *International Conference on Computer Vision 2021*.
- [3] [Y. Xiangli](#), Y. Deng, B. Dai, C. C. Loy and D. Lin, “Real or Not Real, that is the Question,” in *International Conference on Learning Representations 2020*. **(Spotlight)**
- [4] C. X. Lu, Y. Li, [Y. Xiangli](#) and Z. Li, “Nowhere to Hide: Cross-modal Identity Leakage between Biometrics and Devices,” in *Proceedings of The Web Conference 2020*.
- [5] C. X. Lu, [Y. Xiangli](#), P. Zhao, C. Chen, N. Trigoni and A. Markham, “Autonomous Learning of Speaker Identity and WiFi Geofence from Noisy Sensor Data,” in *IEEE Internet of Things Journal*, 2019.
- [6] [Y. Xiangli](#), C. X. Lu, P. Zhao, C. Chen, A. Markham, “iSCAN: automatic speaker adaptation via iterative cross-modality association,” in *ISWC Adjunct, UniComp 2019*.
- [7] Y. Li, H. Deng, [Y. Xiangli](#), Z. Yuan, C. Peng, and S. Lu, “In-device, runtime cellular network information extraction and analysis: demo,” In *Proceedings of the 22nd Annual International Conference on Mobile Computing and Networking (MobiCom '16)*. ACM, New York, NY, USA, 503-504, 2016.

RESEARCH EXPERIENCE

CityNeRF	Reconstruct city scenes at drastic multi-scale via Neural Radiance Field (NeRF) An attempt to bring NeRF to potentially city-scale scenes, which requires rendering drastically varied observations (level-of-detail and spatial coverage) at multiscales. It is an indispensable step towards efficient and realistic city-scale neural rendering in the future.
GridNeRF	Grid-guided Neural Radiance Fields for Large Urban Scenes GridNeRF targets at modeling vast-spanned urban regions and operates on real-world data sources. The work shows that parametric models have the potential to reconstruct real-world city-scale scenes and output photorealistic rendering

with high efficiency, which sets the foundation for immersive virtual city experience.

BlockPlanner	<p>City block layout generation with vectorized graph representation</p> <p>Using generative models to automatically learn from large amount of public urban planning data enables fast generation of batches of diverse and valid city block templates, which encourage more stakeholders and non-expertise to participate in city design and planning. The vectorized representation is memory efficient and allows easy visualization and editing, e.g. global style transformation and local arrangement editing.</p>
RealnessGAN	<p>Realness distribution guided Generative Adversarial Network (GAN)</p> <p>The proposed realness distribution provides stronger guidance to the generator and encourages it to learn more diverse outputs. The proposed approach enables the simplest GAN structure to be able to synthesis high resolution portrait for the first time, with affordable computational overhead.</p>
SCAN+/iSCAN	<p>Automatic inferring voice labels for speaker identification via ambient WiFi data</p> <p>The proposed framework leverages the abundant side-channel information provided by the ubiquitous IoT environment in modern life, enabling the construction of an in-domain speaker recognition model with zero human enrollment. It can also be continuously updated through lifelong learning to fit changes in the user group.</p>

PROJECT EXPERIENCE

2020.3-2021.9	<p>Compilation and composition of Information Technology Textbook (High School)</p> <p><u>Author</u></p> <p>Composed Chapter 14: Generative Modeling; participate in reviewing other chapters.</p>
2019.2-2019.8	<p>Sensetime</p> <p><u>Research Intern</u></p> <p>Worked with Dr. Bo Dai and Prof. Dahua Lin on realistic image synthesis with generative models.</p>
2016 Summer	<p>Computer Science Department, the University of California, Los Angeles</p> <p><u>Research Assistant</u></p> <p>Worked with Dr. Yuanjie Li and Prof. Songwu Lu on project 'MobileInsight', improving Dynamic Adaptive Streaming over HTTP (DASH) algorithm using physical layer bandwidth for smoother streaming.</p>
2015.9-2016.6	<p>Computer Science Department, University of Nottingham</p> <p><u>Data Analyst and developer (android app 'MentalSpace')</u></p> <p>Worked with Prof. Max L. Wilson on electroencephalogram (EEG) data collection, analysis, and visualization.</p>
2015 Summer	<p>Information Engineering Department, the Chinese University of Hong Kong</p> <p><u>Research Assistant</u></p> <p>Worked with Prof. Chen Change Loy on image aesthetic assessment.</p>

TEACHING ASSISTANT

2021 Spring	Data Structure (Undergrad)
2019/20 Spring	Multimedia Coding and Processing (Undergrad)

SKILLS AND INSERTS

Skills	Python/Numpy, PyTorch, C, C++
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