





# GUOCHENG (GORDON) QIAN

Actively Seeking A **Full-Time** Research Scientist Job

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## SUMMARY

I am a Ph.D. candidate in Computer Science at KAUST under the supervision of prof. Bernard Ghanem. I am expected to graduate in Fall 2023. I was fortunate to work as a research intern at Snap Research, Meta Reality Lab, Microsoft, Megvii, and SenseTime. My research interests lie in **3D perception and 3D AI-generated content (AIGC)**. I have 10 first-authored papers with 620 citations in total. My representative work includes **3D Foundation Model PointNeXt** (NeurIPS), efficient point cloud network **ASSANet** (NeurIPS spotlight), Graph Foundation Model **DeepGCNs** (T-PAMI), and **image-to-3D** generation **Magic123** (preprint). I am a summer intern at Snap Research from May to Sep 2023, working on **foundation model for text/image-to-3D generation**.

## EDUCATION

<b>King Abdullah University of Science and Technology (KAUST)</b> <i>Ph.D. candidate in Computer Science (3D Vision), GPA: 3.9/4.0</i> <i>CEMSE Research Excellence Award (less than 10 students)</i>	Jeddah, Saudi Arabia May 2019 - Fall 2023 (Expected)
<b>Xi'an Jiaotong University (XJTU, C9, 985, 211)</b> <i>Bachelor's degree in Engineering with honors, GPA: 3.9/4.0, Rank 1<sup>st</sup>/50</i> <i>Outstanding Undergraduate (highest undergraduate honor awarded to 10 undergraduates)</i>	Xi'an, China Aug 2014 - Jul 2018
Exchange Student in Japan-Asia Youth Exchange Program	Feb 2018 - Mar 2018
Exchange Student at Hong Kong University of Science and Technology (HKUST)	Feb 2017 - May 2017

## PUBLICATIONS

See google scholar for a full list: <https://scholar.google.com/citations?user=DUDaxg4AAAAJ>

Citations: 628; H-index: 9; First-authored papers: 10; Top-tier conference/journal papers: 7. (Date: Jul 13, 2023)

- [1] **Guocheng Qian**, Jinjie Mai, Jian Ren, Aliaksandr Siarohin, Hsin-Ying Lee, Bing Li, Abdullah Hamdi, Ivan Skorokhodov, Peter Wonka, Sergey Tulyakov, and Bernard Ghanem. **Magic123: One image to High-Quality 3D Object Generation** using diffusion priors. *under review*, 2023
- [2] **Guocheng Qian**, Yuchen Li, Houwen Peng, Jinjie Mai, Hasan Hammoud, Mohamed Elhoseiny, and Bernard Ghanem. **PointNeXt: Revisiting pointnet++ with improved training and scaling strategies**. In *Advances in Neural Information Processing Systems (NeurIPS)*, 2022
- [3] **Guocheng Qian**, Hasan Hammoud, Guohao Li, Ali Thabet, and Bernard Ghanem. ASSANet: An anisotropic separable set abstraction for **Efficient Point Cloud** representation learning. In *Advances in Neural Information Processing Systems (NeurIPS Spotlight)*, 2021
- [4] **Guocheng Qian**, Abdullellah Abualshour, Guohao Li, Ali Thabet, and Bernard Ghanem. PU-GCN: Point cloud upsampling using graph convolutional networks. In *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, June 2021
- [5] **Guocheng Qian\***, G. Li\*, Matthias Müller\*, Itzel C. Delgadillo, Abdullellah Abualshour, Ali K. Thabet, and Bernard Ghanem. **DeepGCNs: Making gcns go as deep as cnns**. *IEEE transactions on pattern analysis and machine intelligence (T-PAMI)*, 2021
- [6] **Guocheng Qian\***, G. Li\*, Itzel C. Delgadillo\*, Matthias Müller, Ali K. Thabet, and Bernard Ghanem. SGAS: Sequential greedy architecture search. *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, pages 1617–1627, 2020

- [7] **Guocheng Qian**, Yuanhao Wang, Jinjin Gu, Chao Dong, Wolfgang Heidrich, Bernard Ghanem, and Jimmy S Ren. Rethinking learning-based demosaicing, denoising, and super-resolution pipeline. In *IEEE International Conference on Computational Photography (ICCP)*, pages 1–12. IEEE, 2022
- [8] **Guocheng Qian**, Xuanyang Zhang, Guohao Li, Chen Zhao, Yukang Chen, Xiangyu Zhang, Bernard Ghanem, and Jian Sun. When NAS meets trees: An efficient algorithm for neural architecture search. In *CVPR Workshop*, pages 2782–2787, 2022
- [9] Sicheng Chen, **Guocheng Qian**, Bernard Ghanem, Yongqing Wang, Zhou Shu, Xuefeng Zhao, Lei Yang, Xinqin Liao, and Yuanjin Zheng. Quantitative and real-time evaluation of human respiration signals with a shape-conformal wireless sensing system. *Advanced Science*, 9(32):2203460, 2022
- [10] **Guocheng Qian**, Xingdi Zhang, Abdullah Hamdi, and Bernard Ghanem. Pix4Point: Image pretrained transformers for 3d point cloud understanding. *under review*, 2023
- [11] **Guocheng Qian**, Yunyang Xiong, Haoqi Fan, Zhuang Liu, Zechun Liu, Jun Chen, Haichuan Yang, Dilin Wang, Fei Sun, Mohamed Elhoseiny, Raghuraman Krishnamoorthi, Bernard Ghanem, and Vikas Chandra. GTMNet: A global template matching convnet for video recognition. *under review*, 2023
- [12] Jinjie Mai, Jun Chen, Bing Li, **Guocheng Qian**, Mohamed Elhoseiny, and Bernard Ghanem. Llm as a robotic brain: Unifying egocentric memory and control. *under review*, 2023

## PROFESSIONAL EXPERIENCE

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### Snap Research

May 2023 - Sep 2023

- AIGC Intern, working with Jian Ren, Aliaksandr Siarohin, Sergey Tulyakov, and Kfir Aberman
- Topic: “A foundation model for text/image-to-3D generation” (ongoing)
- paper: “Magic123: One image to High-Quality 3D Object Generation using diffusion priors” (under review)

### Meta Reality Lab

Aug 2022 - Feb 2023

- AI Research Scientist Intern, working with Yunyang Xiong, Haoqi Fan, Zhuang Liu
- Paper: “GTMNet: A Global Template Matching ConvNet for Video Recognition” (under review)

### Microsoft Research

Dec 2021 - May 2022

- Remote Intern, mentored by senior researcher Dr. Houwen Peng
- Paper: “PointNeXt: Revisiting pointnet++ with improved training and scaling strategies.” (NeurIPS’22)

### Megvii Technology Research

Jul 2021 - Nov 2021

- Computer Vision Remote Intern, working with Xuanyang Zhang and Xiangyu Zhang
- Paper: “When NAS Meets Trees: An Efficient Algorithm for Neural Architecture Search” (CVPRW’22)

### SenseTime Research

Aug 2018 - Apr 2019

- Computer Vision Intern, mentored by senior director Dr. Jimmy S. Ren and Dr. Dong Chao
- Paper: “Rethinking Learning-based Demosaicing, Denoising, and Super-Resolution Pipeline” (ICCP’22)

## ACADEMIC EXPERIENCE

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**Teaching Assistant** Deep Learning for Visual Computing (2020 - 2022), Design and Analysis of Algorithms (2021)

**Reviewer** CVPR, ECCV, ICCV, ICML, NeurIPS, AAAI, IJCAI, T-PAMI, TVCG

**Conference Organizer** Tutorial on Graph Machine Learning for Computer Vision @ CVPR’22 , Workshop on Learning 3D with Multi-View Supervision @ CVPR’23

## HONORS & AWARDS

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**KAUST CEMSE Research Excellence Award** Less than 10 students

**KAUST CEMSE Dean’s List Award** Awarded to 20% CEMSE students

**KAUST Fellowship** Full tuition support, monthly living allowance, housing, and medical coverage

**National Scholarship** Top 1%, first-class national scholarship in China

**Outstanding Undergraduate** Highest undergraduate honor awarded to 10 selected undergraduates

**Excellent Student Cadre** Awarded to 3% undergraduate students with leadership

## PROGRAMMING SKILLS

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- **PyTorch**: PointNeXt (🌟 >500 stars), SGAS (🌟 >150 stars), DeepGCNs (🌟 >1000 stars)
- **Tensorflow**: PU-GCN (🌟 >130 stars)
- **Large scale GPU usage**: multi-node distributed training experience using over 100 GPUs
- **C++, CUDA**: Course projects on **CUDA** based image processing (🌟), and **C++** based curvature estimation (🌟)
- **MATLAB**: experience in image processing, **3D reconstruction** (🌟)