

CHANGJIAN LI

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ACADEMIC POSITIONS

Assistant Professor

Oct. 2022 - present

School of Informatics, University of Edinburgh, UK

Starting Researcher

Oct. 2021 - Jul. 2022

GraphDeco Group, Inria Sophia-Antipolis, France

Work with Dr. Adrien Bousseau

Postdoctoral Researcher

Oct. 2019 - Sep. 2021

Smart Geometry Processing Group, University College London, UK

Hosted by Prof. Niloy Mitra

EDUCATION

The University of Hong Kong, Hong Kong, China

Aug. 2014 - Sep. 2019

Ph.D., Department of Computer Science

Supervisor: Prof. Wenping Wang

Shandong University, Jinan, China

Sep. 2010 - Jun. 2014

BEng, Software Engineering

Software College

PUBLICATION LIST

**corresponding author, #joint first author*

1. Haocheng Yuan, Jing Xu, Hao Pan, Adrien Bousseau, Niloy Mitra, **Changjian Li**. 2024. *CADTalk: An Algorithm and Benchmark for Semantic Commenting of CAD Programs*. IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2024. (Highlight, top 11.9%)
2. Jiawei Wang, **Changjian Li**. 2024. *ContextSeg: Sketch Semantic Segmentation by Querying the Context with Attention*. IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2024.
3. Ankan Bhunia, **Changjian Li**, Hakan Bilen. 2024. *Looking 3D: Anomaly Detection with 2D-3D Alignment*. IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2024.
4. Guangshun Wei, Hao Pan, Shaojie Zhuang, Yuanfeng Zhou*, **Changjian Li**, 2023. *iPUNet: Iterative Cross Field Guided Point Cloud Upsampling*. IEEE Visualization and Computer Graphics (TVCG), 2023.
5. Felix Hähnlein, **Changjian Li**, Niloy Mitra, Adrien Bousseau. 2022. *CAD2Sketch: Generating Concept Sketches from CAD Sequences*. ACM Trans. Graph., 41(6), 2022, proceedings of SIGGRAPH Asia, 2022.
6. **Changjian Li**, Hao Pan, Adrien Bousseau, Niloy Mitra. 2022. *Free2CAD: Parsing Freehand Drawings into CAD Commands*. ACM Trans. Graph., 41(4), 2022, proceedings of SIGGRAPH, 2022. (Best Paper Honorable Mention Award).
7. Cheng Lin, **Changjian Li***, Yuan Liu, Nenglun Chen, Yi-King Choi, Wenping Wang*. 2021. *Point2Skeleton: Learning Skeletal Representations from Point Clouds*. IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2021. (Oral Presentation, Best Paper Nomination Award)

8. Zhiming Cui, **Changjian Li**, Lei Yang, Chunfeng Lian, Feng Shi, Wenping Wang, Dijia Wu, Dinggang Shen. 2021. *VertNet: Accurate Vertebra Localization and Identification Network from CT Images*. International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI), 2021.
9. Zhiming Cui, **Changjian Li**, Zhixu Du, Nenglun Chen, Guodong Wei, Runnan Chen, Lei Yang, Dinggang Shen, Wenping Wang. 2021. *Structure-Driven Unsupervised Domain Adaptation for Cross-Modality Cardiac Segmentation*. IEEE Transactions on Medical Imaging (TMI), 2021.
10. Zhiming Cui[#], Bojun Zhang[#], Chunfeng Lian, **Changjian Li**^{*}, Lei Yang, Min Zhu^{*}, Wenping Wang, Dinggang Shen^{*}. 2021. *Hierarchical Morphology-Guided Tooth Instance Segmentation from CBCT Images*. Information Processing in Medical Imaging (IPMI) 2021. (Oral Presentation)
11. Zhiming Cui, **Changjian Li**, Nenglun Chen, Guodong Wei, Runnan Chen, Yuanfeng Zhou, Dinggang Shen^{*}, Wenping Wang^{*}. 2021. *TSegNet: an Efficient and Accurate Tooth Segmentation Network on 3D Dental Model*. Medical Image Analysis (MIA), 2021.
12. Yushiang Wong, **Changjian Li**, Matthias Niessner, Niloy Mitra. 2021. *RigidFusion: RGB-D Scene Reconstruction with Rigidly-moving Objects*. Eurographics (EG), 2021.
13. Hui Zhang, Lei Yang, **Changjian Li**, Bojian Wu, Wenping Wang. 2021. *ScaffoldGAN: Synthesis of Scaffold Materials based on Generative Adversarial Networks*. Computer-Aided Design (CAD), 2021.
14. **Changjian Li**, Hao Pan, Adrien Bousseau, Niloy Mitra. 2020. *Sketch2CAD: Sequential CAD Modeling by Sketching in Context*. ACM Trans. Graph., 39(6), 2020, proceedings of SIGGRAPH Asia, 2020.
15. Cheng Lin, Lingjie Liu, **Changjian Li**, Leif Kobbelt, Bin Wang, Shiqing Xin, Wenping Wang. 2020. *SEG-MAT: 3D Shape Segmentation Using Medial Axis Transform*. IEEE Visualization and Computer Graphics (TVCG), 2020).
16. Zhiming Cui, **Changjian Li**, Wenping Wang. 2019. *ToothNet: Automatic Tooth Instance Segmentation and Identification from Cone Beam CT Images*. IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2019.
17. Cheng Lin, **Changjian Li**, Wenping Wang. 2019. *Floorplan-Jigsaw: Jointly Estimating Scene Layout and Aligning Partial Scans*. International Conference on Computer Vision (ICCV), 2019.
18. **Changjian Li**, Hao Pan, Yang Liu, Xin Tong, Alla Sheffer, Wenping Wang. 2018. *Robust Flow-Guided Neural Prediction for Sketch-Based Freeform Surface Modeling*. ACM Trans. Graph., 37(6), 2018, proceedings of SIGGRAPH Asia 2018.
19. **Changjian Li**, Hao Pan, Yang Liu, Xin Tong, Alla Sheffer, Wenping Wang. 2017. *BendSketch: Modeling Freeform Surfaces Through 2D Sketching*. ACM Trans. Graph., 36(4), 2017, proceedings of SIGGRAPH 2017.
20. Hao Pan, Yang Liu, Alla Sheffer, Nicholas Vining, **Changjian Li**, Wenping Wang. 2015. *Flow Aligned Surfacing of Curve Networks*. ACM Trans. Graph., 36(4), 2015, proceedings of SIGGRAPH 2015.
- Preprint
21. Zhentao Liu, Yu Fang, **Changjian Li**, Han Wu, Yuan Liu, Zhiming Cui, Dinggang Shen. *Geometry-Aware Attenuation Field Learning for Sparse-View CBCT Reconstruction*. ArXiv, 2023.
22. Yu Fang, Lanzhuju Mei, **Changjian Li**, Yuan Liu, Wenping Wang, Zhiming Cui, Dinggang Shen. *SNAF: Sparse-view CBCT Reconstruction with Neural Attenuation Fields*. ArXiv, 2022.

23. Yuezhi Yang, Zhiming Cui, **Changjian Li**, Wenping Wang. *ToothInpaintor: Tooth Inpainting from Partial 3D Dental Model and 2D Panoramic Image*. *ArXiv*, 2022.

RESEARCH FUNDING

| | |
|--------------------------------------------------------------------------------------------|---------------------------|
| CoSTAR Realtime Lab, UKRI <i>CO-I, AI Lead</i> | 2024-2029 £5M GBP |
| Generative AI Laboratory (GAIL), University of Edinburgh <i>Seed Funding, PI</i> | 2024-2024 £15,000 GBP |
| Bayes Center, University of Edinburgh <i>Seed Funding, PI</i> | 2023-2024 £6,000 GBP |
| University of Edinburgh <i>Start-Up Funding, PI</i> | 2022-2024 £200,000 GBP |

AWARDS AND PRIZES

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|------------------------------------------------------------------------------------------|------------|
| ACM SIGGRAPH, Best Paper Honorable Mention - Free2CAD | 2022 |
| CVPR, Best Paper Candidates - Point2Skeleton | 2021 |
| Back cover image on Proceedings of ACM SIGGRAPH | 2018 |
| YS & Christabel Lung PG Scholarship (HKU) | 2014-2017 |
| Postgraduate Scholarship (HKU) | 2014-2019 |
| President's Scholarship of Shandong University (top 0.5% , highest student honor) | 2013 |
| Google Excellent Student Scholarship (top 0.5%) | 2013 |
| Nation Scholarship of China (top 2% , twice) | 2011, 2012 |
| Excellent Student of Shandong Province (top 0.05%) | 2012 |

RESEARCH EXPERIENCE

| | |
|----------------------------------------------------------------------------|------------------------------------------------|
| Research Intern <i>Microsoft Research Asia, Beijing</i> | Feb. 2016 - Aug. 2018 <i>Multiple Times</i> |
| - Mentor: Dr. Hao Pan, Dr. Yang Liu, and Dr. Xin Tong | |
| Research Assistant <i>The University of Hong Kong, Hong Kong</i> | Feb. 2014 - Jun. 2014 |
| - Supervisor: Prof. Wenping Wang | |
| - Bachelor Thesis: Sketch-based Modeling: An Intuitive Modeling Interface. | |

INVITED TALKS

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| Keynote Speaker at DIRA Workshop, ECCV2022, Tel Aviv High-quality CAD modeling via Rough Sketching. | Oct. 2022 |
| Invited Workshop Keynote Speaker at GDC, Qingdao, China Free2CAD: Parsing Freehand Drawings into CAD Commands. | Aug. 2022 |
| School of Software, Tsinghua University, China Creating, Analyzing and Processing 3D Data: Applications to interactive 3D modeling and to medical imaging. | Dec. 2021 |

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| School of Informatics, University of Edinburgh, UK Creating, Analyzing and Processing 3D Data: Applications to interactive 3D modeling and to medical imaging. | Oct. 2021 |
| Stanford Human-Computer Interaction Group, Stanford, US Sketch2CAD: Sequential CAD Modeling by Sketching in Context. | Jan. 2021 |
| AI Lab, Autodesk, US Sketch2CAD: Sequential CAD Modeling by Sketching in Context. | Jan. 2021 |
| Software College, Shandong University, China Sketch-based Freeform Surface Modeling. | Oct. 2019 |
| iDDA, The Chinese University of Hong Kong (Shenzhen), China SketchAShape: Sketch-based Freeform Surface Modeling. | Jul. 2019 |
| IRC Lab, Shandong University, China Robust Flow-Guided Neural Prediction for Sketch-Based Freeform Surface Modeling. Automatic Tooth Instance Segmentation and Identification from CBCT Images. | Mar. 2019 |
| DGP Lab, University of Toronto, CA BendSketch: Modeling Freeform Surfaces Through 2D Sketching. | Sept. 2018 |
| GAMES: Graphics And Mixed Environment Seminar, China Robust Flow-Guided Neural Prediction for Sketch-Based Freeform Surface Modeling. | Nov. 2018 |

IN THE PRESS

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| ACM SIGGRAPH Technical Paper Press Release. Best Paper Honorable Mention Award - Free2CAD. | 2022 |
| CCTV News Report. World Artificial Intelligence Conference (WAIC) - SketchCNN. | 2019 |
| Computer Vision News, The magazine of the algorithm community. ICCV Daily 2019. - Floorplan-Jigsaw. | 2019 |
| IEEE Computer Society. Poster Sessions Provoke Deep Discussions at the 2019 Conference on CVPR - ToothNet. | 2019 |
| ACM SIGGRAPH Asia Technical Paper Press Releases. SketchCNN: Making it Easier To Transform FreeForm 2D Sketching Into 3D Models. | 2018 |
| Seamless, Virtual Reality. A new method using CNN to model 3D surface from handwritten 2D sketch. | 2018 |

TEACHING

| | |
|--------------------------------------------------------------------------|---------------|
| Lecturer, INFR11140 - Image and Vision Computing. UoE, Informatics. | 2023-2024, S2 |
| Lecturer, INFR09051 - Informatics Large Practical. UoE, Informatics. | 2023-2024, S1 |
| Assistant, COMP0119 - Acquisition and Processig of 3D Geometry. UCL, CS. | 2020-2021, S2 |
| Assistant, COMP2396 - Object Oriented Programming and Java. HKU, CS. | 2017-2018, S2 |

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| Assistant, ENGG1111 - Computer Programming and Applications. HKU, CS. | 2016-2017, S1 |
| Assistant, COMP7507 - Visualization and Visual Analytics. HKU, CS. | 2015-2016, S1 |
| Assistant, ENGG1111 - Computer Programming and Applications. HKU, CS. | 2014-2015, S1 |

PHD ADVISING

| | |
|-----------------------------------------------|-----------------------|
| Haocheng Yuan | 2023-present, UoE |
| Yue Ruan | 2023-present, UoE |
| Ankan Bhunia (co-sup. with Hakan Belien) | 2023-present, UoE |
| Miaowei Wang (co-sup. with Amir Vaxman) | 2023-present, UoE |
| Salvatore Esposito (co-sup. with Arno, Oisin) | 2023-present, UoE |
| Guangshun Wei | 2021-present, SDU&HKU |
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| Felix Hähnlein (Co-sup. with Adrien Bousseau) | 2021-2022, INRIA |
| Yushiang Wong (Co-sup. with Niloy Mitra) | 2019-2021, UCL |
| Zhiming Cui (Co-sup. with Wenping Wang) | 2018-2022, HKU |
| Cheng Lin (Co-sup. with Wenping Wang) | 2017-2021, HKU |

MASTER ADVISING

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| Mingjun Yang (MScR) | 2023-present, UoE |
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UNDERGRADUATE ADVISING

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| Jing Xu | 2023.10-2023.12, UoE |
| Shuyuan Zhang | 2023-present, UoE |
| Jiawei Wang | 2023.04-2023.11, SDU |
| Kuankuan Cheng | 2023-present, XJTU |
| Noah Ramsden | 2023-present, UoE |
| Blair Knyspel | 2023-present, UoE |

THESIS COMMITTEE

| | |
|-------------------------------------------------------------------------------------------------|---------------|
| Xiang Xu | Apr. 26, 2024 |
| Simon Fraser University, Ph.D. | |
| <i>Thesis: Towards Automating 3D Computer-Aided Design with Deep Generative Model</i> | |
| Weiwei Cui | Mar. 15, 2024 |
| Queen Mary, University of London, Ph.D. | |
| <i>Thesis: AI-based Dentistry Image Segmentation</i> | |
| Linxu Fan | Jan. 10, 2024 |
| University of Edinburgh, Ph.D. | |
| <i>Thesis: Simulating Fracture in Brittle Objects and Thin Shell Objects for Visual Effects</i> | |
| Arushi Goel | Oct. 13, 2023 |
| University of Edinburgh, Ph.D. | |
| <i>Thesis: Investigating the Role of Linguistic Knowledge in Vision and Language Tasks</i> | |
| Kiyoong Kim | Oct. 10, 2023 |
| University of Edinburgh, Ph.D. | |
| <i>Thesis: Towards Accessible Action Recognition</i> | |
| Zhen Luo | Aug. 30, 2023 |
| University of Edinburgh, MScR | |
| <i>Thesis: Learning Scene Flow Estimation on mmWave Point Cloud for Robust Human Sensing</i> | |
| Zhengdi Yu | Jun. 9, 2023 |
| Durham University, MScR | |
| <i>Thesis: 3D Representation Learning for ShapeReconstruction and Understanding</i> | |

Weizhen Ding

May. 28, 2023

The Chinese University of Hong Kong, Shenzhen, MPhil

Thesis: Colonoscopy Images Analysis via Domain Alignment and Curriculum Learning

CONFERENCE PROGRAM COMMITTEES

| | |
|----------------------------------------------------------|------------|
| ACM SGGIRAPH Asia: Technical Paper Committee | 2023 |
| ACM SIGGRAPH: Poster Jury Committee | 2023, 2024 |
| Geometry Design and Computing: Technical Paper Committee | 2022, 2023 |

REVIEWER SERVICE

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|-------------------------------------------------------------------------|------------------|
| ACM Transaction on Graphics (TOG) | 2022 |
| ACM SIGGRAPH | 2021-2024 |
| ACM SIGGRAPH Asia | 2015, 2019-2023 |
| Conference on Computer Vision and Pattern Recognition (CVPR) | 2021, 2023, 2024 |
| International Conference on Computer Vision (ICCV) | 2021 |
| IEEE Transactions on Visualization & Computer Graphics (TVCG) | 2020-2024 |
| Eurographics (EG) | 2019-2023 |
| ACM SIGCHI | 2020, 2023 |
| ACM Symposium on User Interface Software and Technology (UIST) | 2020 |
| Computer-Aided Design | 2019, 2022, 2023 |
| Computer Graphics Forum (CGF) | 2019 |
| Journal of Computer Science and Technology (JCST) | 2019 |
| Pacific Graphics (PG) | 2018, 2023 |
| Eurographics Symposium on Geometry Processing (SGP) | 2018, 2023 |
| International Conference on Computer-Aided Design and Graphics (CAD&CG) | 2015, 2019 |
| Geometry Design and Computing (GDC) | 2022, 2023 |
| IEEE Transactions on Image Processing (TIP) | 2023 |
| Journal of Computer Science and Technology (JCST) | 2023 |
| The Visual Computer (TVCJ) | 2023 |