

CHENJIE CAO

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🎓 EDUCATION

Fudan University, ShangHai 2020 – Present

Ph.D. in Statistics (Research: Computer Vision), will graduate in 2024.1.

East China University of Science and Technology (ECUST), ShangHai 2012 – 2019

B.S. and Master in Computer Science (Research: Imbalanced Classification Problems).

👤 RESEARCH

- Image inpainting (structure/prior based inpainting in ICCV2021, CVPR2022, ECCV2022, TPAMI2023).
- Image synthesis (diffusion controlling and transformer-based generation NeurIPS2021)
- Multi-view stereo (ViT feature enhanced stereo learning TMLR2023).
- Neural surface reconstruction (strengthened by various prior features from different pre-text tasks).
- Image matching (matching-based optical flow estimation CVPR2023).

Related Papers

(* means equal contribution)

- ***Chenjie Cao**, *Qiaole Dong, Yanwei Fu. ZITS++: Image Inpainting by Improving the Incremental Transformer on Structural Priors. TPAMI. 2023.
- *Chao Wen, *Yinda Zhang, **Chenjie Cao**, et al. Pixel2mesh++: 3d mesh generation and refinement from multi-view images. TPAMI. 2022.
- **Chenjie Cao**, Qiaole Dong, Yikai Wang, Yunuo Cai, Yanwei Fu. A Unified Prompt-Guided In-Context Inpainting Framework for Reference-based Image Manipulations. (Under review)
- *Xinlin Ren, ***Chenjie Cao**, Yanwei Fu. Improving Neural Surface Reconstruction with Feature Priors from Multi-View Images. (Under review)
- Linbo Wang, Jing Wu, Xianyong Fang, Zhengyi Liu, **Chenjie Cao**, Yanwei Fu. Local Consensus Enhanced Siamese Network with Reciprocal Loss for Two-view Correspondence Learning. ACM MM. 2023.
- **Chenjie Cao**, Yanwei Fu. Improving Transformer-based Image Matching by Cascaded Capturing Spatially Informative Keypoints. ICCV. 2023.
- *Qiaole Dong, ***Chenjie Cao**, Yanwei Fu. Rethinking Optical Flow from Geometric Matching Consistent Perspective. CVPR. 2023.
- **Chenjie Cao**, Xinlin Ren, and Yanwei Fu. MVSFormer: Multi-View Stereo by Learning Robust Image Features and Temperature-based Depth. TMLR. 2023.
- ***Chenjie Cao**, *Qiaole Dong, and Yanwei Fu. Learning Prior Feature and Attention Enhanced Image Inpainting. ECCV. 2022.
- *Qiaole Dong, ***Chenjie Cao**, and Yanwei Fu. Incremental Transformer Structure Enhanced Image Inpainting with Masking Positional Encoding. CVPR. 2022.
- Chengrong Wang, **Chenjie Cao**, et al. High-Fidelity Portrait Editing Via Exploring Differentiable Guided Sketches from the Latent Space. ICASSP. 2022.
- **Chenjie Cao**, Chengrong Wang, Yuntao Zhang, Yanwei Fu. Wavelet Prior Attention Learning in Axial Inpainting Network. (Under review)
- **Chenjie Cao**, Yuxin Hong, Xiang Li, Chengrong Wang, Chengming Xu, Yanwei Fu, Xiangyang Xue. The Image Local Autoregressive Transformer. NeurIPS. 2021.
- **Chenjie Cao**, and Yanwei Fu. Learning a Sketch Tensor Space for Image Inpainting of Man-Made Scenes. ICCV. 2021.
- Liang Xu, Xuanwei Zhang, Lu Li, Hai Hu, **Chenjie Cao**, et al. CLUE: A Chinese Language Understanding Evaluation Benchmark. COLING. 2020.
- Wang, Zhe, **Chenjie Cao**, and Yujin Zhu. Entropy and Confidence-based Undersampling Boosting Random Forests for Imbalanced Problems. TNNLS. 2020.
- Chen, Jiahao, **Chenjie Cao**, and Xiuyan Jiang. SiBert: Enhanced Chinese Pre-trained Language Model with Sentence Insertion. LREC. 2020.
- Wang, Zhe, and **Chenjie Cao**. Cascade Interpolation Learning with Double Subspaces and Confidence Disturbance for Imbalanced Problems. Neural Networks. 2019.
- **Chenjie Cao**, and Zhe Wang. IMCStacking: Cost-sensitive Stacking Learning with Feature Inverse Mapping for Imbalanced Problems. KBS. 2018.

- Li, DongDong, Zhe Wang, **Chenjie Cao** et al. Information Entropy-based Sample Reduction for Support Vector Data Description. ASC 2018.

⚙️ WORK/PROJECT

OneConnect AI Research Institute Department

2018-2020

Intern Algorithm Engineer

- Responsible for completing the face recognition project, which includes: face detection, face alignment, CNN models for feature extraction, and C++ engineering implementation; anti-spoofing model; liveness detection algorithm.
- The GAN-based micro-expression generation project, improving the open-source model, -GANimation, optimizing the generated results and successfully deploying the project with engineering implementation.

Algorithm Engineer

- Participated and achieved championship in the Squad2018, CMRC2019, DROP2019, and DocVQA2020 competitions or leaderboards.
- Completed the self-training loop for machine reading comprehension (extracting answer candidates, generating questions, filtering questions, and data augmentation) to improve performance on the Squad dataset.
- Explored large language understanding/generation models, and developed a new pre-training model based on sentence insertion, effectively improving the performance of multiple downstream NLP tasks **in** LREC.
- Participated in the initial ChineseGLUE (CLUE) team for a Chinese NLP benchmark as the primary person responsible for Chinese reading comprehension evaluation.

Fudan University

2020-2024

Ph.D. Candidate

- Participated in Huawei research projects: image inpainting based on structural priors and reference views. The relevant functionalities have been deployed.
- ACCV2022 Tutorial: The Priors Guided Image Editing and Synthesis **in** Link.

♥️ HONORS AND AWARDS

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|---|-----------|
| <i>1st of Paper Presentation and Defense at ECUST</i> | 2017 |
| <i>National Scholarship for Graduate Studies</i> | 2018 |
| <i>Ph.D. Named Scholarship</i> | 2021,2022 |
| <i>1st of OMG emotion estimation (WCCI/IJCNN in https://arxiv.org/abs/1805.01060)</i> | 2018 |
| <i>1st of Squad2.0 reading comprehension</i> | 2018.12 |
| <i>1st of CMRC2019 Chinese reading omprehension</i> | 2019 |
| <i>1st of DROP numerical reasoning reading comprehension</i> | 2019 |
| <i>The annual best employee of the OneConnect AI Research Institute Department</i> | 2019 |
| <i>1st of SemEval2020 Semantic evaluation task6</i> | 2020 |
| <i>1st of CVPR2020 DocVQA Document reading comprehension</i> | 2020 |
| <i>1st of Tanks-and-Temples 3D Rec. leaderboard in https://www.tanksandtemples.org/leaderboard/</i> | 2022.5 |
| <i>2nd of GigaMVS 3D Rec.</i> | 2023.1 |

📄 MISCELLANEOUS

- Deep Learning programming: Pytorch, TensorFlow.
- ZhiHu Diffusion introduction (3200+stars) **in** Link.
- DBLP **in** Link, Google Scholar **in** Link.
- 🌐 <https://github.com/ewrfcas>
- The reviewer of TPAMI, IJCV, CVPR, ACMMM, NeurIPS, ICML, and ICLR.