Dengsheng Chen (陈登盛)

AI Researcher

Meituan

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About Me

I specialize in the integration of multimodal understanding and generative models, with a particular emphasis on enhancing the capabilities of autoregressive models for generating and interpreting continuous data, such as images, videos, and 3D content. My expertise extends to large-scale cluster training, involving the deployment of hundreds to thousands of GPUs, and I have played a key role in the training of foundational text-to-image and text-to-video models. In addition, I have conducted in-depth research in areas including AIGC, federated learning, and robotics, with several publications in prestigious conferences within these domains.

Last updated: 2024.12.06

Educations

- **Master's Degree in Computer Science**, National University of Defense Technology, 2019-2022
- **Bachelor's Degree in Computer Science**, Fuzhou University, 2015-2019

Experiences

Meituan, AI Researcher (June 2022 – November 2024)

Model Development and Training:

- Led the initial training of foundational text-to-image and text-to-video models, contributing to the development of state-of-the-art generative models.
- Advanced the creation of a unified multimodal model architecture that integrates autoregressive models for both generative and understanding tasks, enhancing

performance across multiple modalities.

Data Curation Framework:

- Spearheaded the design and development of an innovative DataCuration framework, enabling seamless handling of image and video data.
- Engineered a unified data packaging format and user-friendly front-end visualization interface to streamline data management processes.
- Enhanced the framework with capabilities for automatic data captioning and filtering, thereby supporting sophisticated text-to-image and text-to-video generation workflows.

Innovative Applications in Creative Industries:

- Explored and applied Stable Diffusion (SD) and Stable Video Diffusion (SVD) technologies to develop novel solutions for the creative industry.
- Developed dynamic product imagery and content generation systems with distinctive identifiers, driving intelligent and creative business applications.

ByteDance, AI Intern (January 2021 – December 2021)

- Contributed to algorithm optimization and the development of federated learning systems, enhancing privacy-preserving machine learning techniques and optimizing distributed model training.

Ecovacs Nanjing AI Research Institute, AI Intern (January 2019 – August 2019)

- Worked on Simultaneous Localization and Mapping (SLAM) for autonomous robots, focusing on dense indoor environment construction for advanced sweeping robots, improving navigation and efficiency.

Tencent AI Lab, AI Intern (June 2018 – December 2018)

- Developed depth fusion techniques for 3D face reconstruction using the iPhone depth camera, contributing to improvements in facial recognition and augmented reality applications.

Services

Conference Reviewers

- IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) 2025
- Advances in Neural Information Processing Systems (NeurIPS) 2025
- International Conference on Learning Representations (ICLR) 2025
- International Conference on Machine Learning (ICML) 2025

Preprints & Publications

High-Resolution Image Synthesis via Next-Token Prediction

Dengsheng Chen, Jie Hu, Tiezhu Yue, and Xiaoming Wei

Preprint

PDF | Code | Project Page | BibTex 🔥🔥🔥

Denoising with a Joint-Embedding Predictive Architecture

Dengsheng Chen, Jie Hu, Xiaoming Wei, and Enhua Wu

Preprint

PDF | Code | Project Page | BibTex 🔥🔥

Fine-gained Zero-shot Video Sampling

Dengsheng Chen, Jie Hu, Xiaoming Wei, and Enhua Wu

Preprint

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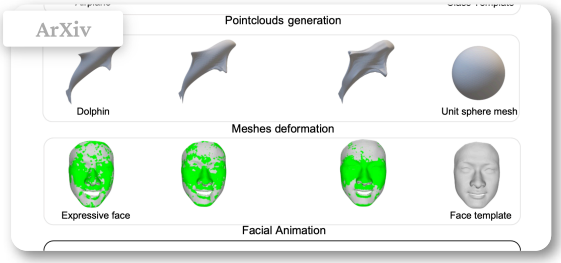
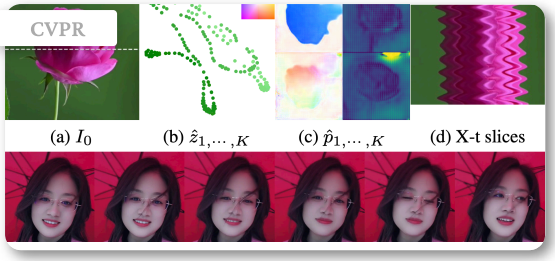


Deformable 3D Shape Diffusion Model

Dengsheng Chen, Jie Hu, Xiaoming Wei, and Enhua Wu

Preprint

PDF | BibTex



Animating general image with large visual motion model

Dengsheng Chen, Xiaoming Wei, and Xiaolin Wei

In Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition, pages 7131–7140, 2024.

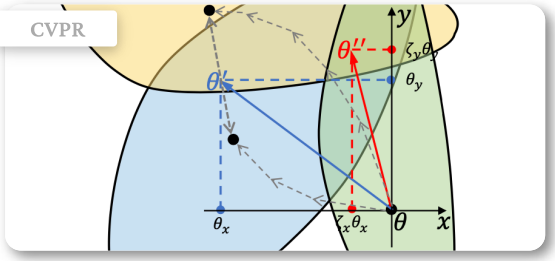
PDF | Code | Project Page | BibTex

Real3d: The curious case of neural scene degeneration

Dengsheng Chen, Jie Hu, Xiaoming Wei, and Enhua Wu

In Proceedings of the AAAI Conference on Artificial Intelligence, pages 1028–1036, 2024.

PDF | BibTex

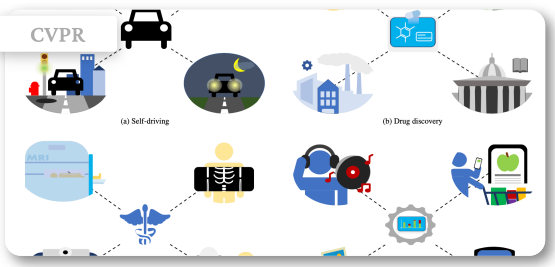


Elastic aggregation for federated optimization

Dengsheng Chen, Jie Hu, Vince Junkai Tan, Xiaoming Wei, and Enhua Wu

In Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition, pages 12187–12197, 2023.

PDF | Code | BibTex

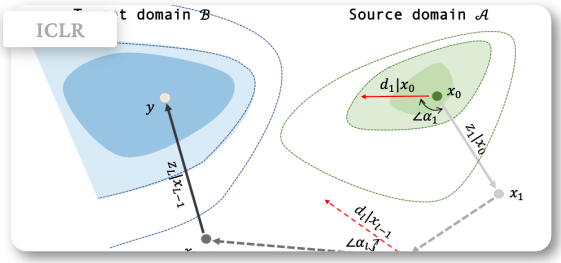


OpenFed: A comprehensive and versatile open-source federated learning framework

Dengsheng Chen, Vince Junkai Tan, Zhilin Lu, Enhua Wu, and Jie Hu

In Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition, pages 5018–5026, 2023.

PDF | Code | BibTex

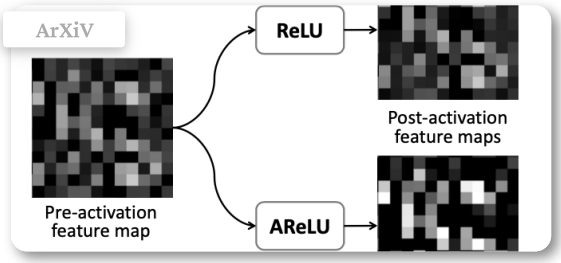


Rethinking skip connection model as a learnable Markov chain

Dengsheng Chen, Jie Hu, Wenwen Qiang, Xiaoming Wei, and Enhua Wu

In The Eleventh International Conference on Learning Representations.

PDF | Code | BibTex



Arelu: Attention-based rectified linear unit

Dengsheng Chen, Jun Li, and Kai Xu

Preprint

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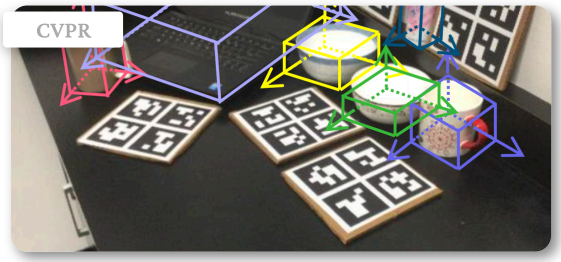
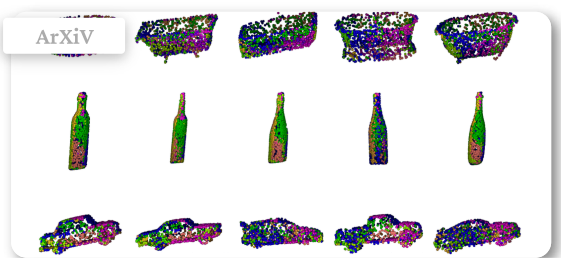


Learning canonical shape space for category-level 6d object pose and size estimation

Dengsheng Chen, Jun Li, Zheng Wang, and Kai Xu

In Proceedings of the IEEE/CVF conference on computer vision and pattern recognition, pages 11973–11982, 2020.

PDF | Code | BibTex



Potential convolution: Embedding point clouds into potential fields

Dengsheng Chen, Haowen Deng, Jun Li, Duo Li, Yao Duan, and Kai Xu

Preprint

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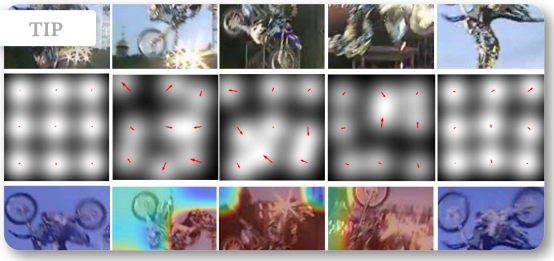

Deformable object tracking with gated fusion

Wenxi Liu, Yibing Song, **Dengsheng Chen**, Shengfeng He, Yuanlong Yu, Tao Yan, Gehard P Hancke, and Rynson WH Lau

IEEE Transactions on Image Processing, 28(8):3766–3777, 2019.

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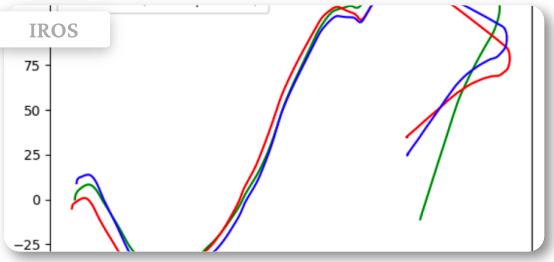

Semi-supervised deep learning framework for monocular visual odometry

Dengsheng Chen, Yuanlong Yu, and Xiang Gao

International Conference on Intelligent Robots and Systems, 2019

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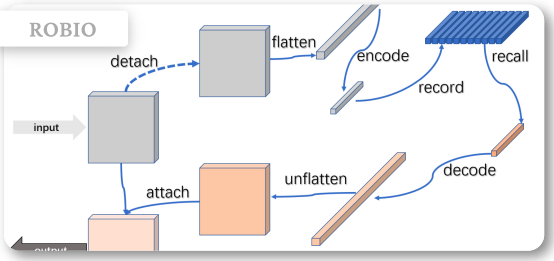

Online memory learning for active object recognition

Dengsheng Chen, Yuanlong Yu, and Zhiyong Huang

In 2019 IEEE International Conference on Robotics and Biomimetics (ROBIO), pages 2914–2919. IEEE, 2019.

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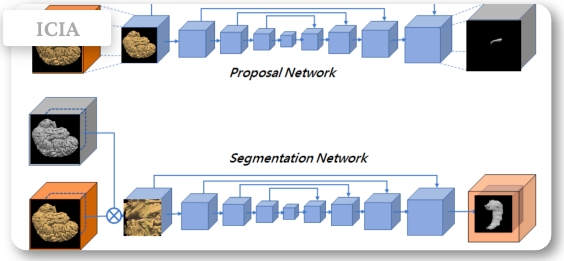

Enhancement mask for hippocampus detection and segmentation

Dengsheng Chen, Wenxi Liu, You Huang, Tong Tong, and Yuanlong Yu.

In 2018 IEEE International Conference on Information and Automation (ICIA), pages 455–460. IEEE, 2018

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