




Deyao Zhu

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Research Interests

AGI, Large Language Model in Decision Making, World Model, Future Prediction, Reinforcement Learning, Vision-Language Understanding.

Education

King Abdullah University of Science and Technology

PhD, Computer Science

Topic in Reinforcement Learning and Motion Forecasting

Thuwal, Saudi Arabia

01/2020 – Now

Gottfried Wilhelm Leibniz Universität Hannover

MSc, Electrical Engineering and Information Technology

Coursework in Robotics and Machine Learning

Hanover, Germany

10/2016 – 04/2019

Tongji University

BEng, Mechatronics

Coursework in Automation and Control Theory

Shanghai, P.R. China

09/2012 – 09/2016

Publications

1. **Deyao Zhu***, Jun Chen*, Xiaoqian Shen, Xiang Li, Mohamed Elhoseiny. **MiniGPT-4: Enhancing Vision-language Understanding with Advanced Large Language Models.** *Preprint (GitHub 7k+ Stars)*
2. Jun Chen, **Deyao Zhu**, Kilichbek Haydarov, Xiang Li, Mohamed Elhoseiny. **Video ChatCaptioner: Towards Enriched Spatiotemporal Descriptions.** *Preprint*
3. **Deyao Zhu**, Jun Chen, Kilichbek Haydarov, Xiaoqian Shen, Wenxuan Zhang, Mohamed Elhoseiny. **ChatGPT Asks, BLIP-2 Answers: Automatic Questioning Towards Enriched Visual Descriptions.** *Preprint*
4. **Deyao Zhu**, Yuhui Wang, Jürgen Schmidhuber, Mohamed Elhoseiny. **Guiding Online Reinforcement Learning with Action-Free Offline Pretraining.** *Preprint*
5. **Deyao Zhu**, Li Erran Li, Mohamed Elhoseiny. **Value Memory Graph: A Graph-Structured World Model for Offline Reinforcement Learning.** *International Conference on Learning Representations (ICLR) 2023*
6. Abdullallah Mohamed, **Deyao Zhu**, Warren Vu, Mohamed Elhoseiny, Christian Claudel. **Social-Implicit: Rethinking Trajectory Prediction Evaluation and The Effectiveness of Implicit Maximum Likelihood Estimation.** *European Conference on Computer Vision (ECCV) 2022*
7. Jun Chen, Aniket Agarwal, Sherif Abdelkarim, **Deyao Zhu**, Mohamed Elhoseiny. **RelTransformer: A Transformer-Based Long-Tail Visual Relationship Recognition.** *Conference on Computer Vision and Pattern Recognition (CVPR) 2022*

8. **Deyao Zhu**, Mohamed Zahran, Li Erran Li, Mohamed Elhoseiny. **Motion Forecasting with Unlikelihood Training in Continuous Space**. *Conference on Robot Learning (CoRL) 2021 (oral 6.5%)*
9. **Deyao Zhu**, Mohamed Zahran, Li Erran Li, Mohamed Elhoseiny. **HalentNet: Multimodal Trajectory Forecasting with Hallucinative Intents**. *International Conference on Learning Representations (ICLR) 2021*
10. **Deyao Zhu**, Marco Munderloh, Bodo Rosenhahn, Jörg Stückler. **Learning to Disentangle Latent Physical Factors for Video Prediction**. *German Conference on Pattern Recognition (GCPR) 2019*

Work History

King Abdullah University of Science and Technology <i>Teaching Assistant</i> CS 283 Deep Generative Model & CS 326 Low Resource Deep Learning	Thuwal, Saudi Arabia 01/2021 – Now
Max Planck Institute for Intelligent Systems <i>Master Thesis Student</i> Focused on video prediction and physics scene understanding	Tübingen, Germany 09/2018 – 04/2019
Bosch Center for Artificial Intelligence <i>Internship</i> Focused on policy gradient methods in autonomous driving	Renningen, Germany 03/2018 – 08/2018
Institut für Informationsverarbeitung, Uni Hannover <i>Research Assistant</i> Focused on human pose estimation	Hanover, Germany 06/2017 – 02/2018

Others

Third-place in Habitat Rearrangement Challenge 2022
Reviewer in TPAMI, CoRL 2022, ECCV 2022, AAAI 2023, and CVPR 2023

Skills

Programming: PyTorch, TensorFlow, Python, Matlab, ROS, C++
Languages: English: Fluent German: Basic Hokkien: Native Mandarin: Native