# Linlin Yang *Male* • *China*

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## Experience

National University of Singapore — Singapore
- **Research Fellow** — *2022.11 – present*
- **Research Associate** — *2020.8 – 2022.11*

University of Bonn — Bonn, Germany
- **Research Assistant** — *2018.3 – 2020.5*

## Education

University of Bonn — Bonn, Germany

Advisor/Co-Advisor: Prof. Angela Yao/Prof. Reinhard Klein

**Ph.D. degree in Computer Science** — *2018.5 – 2022.11*

Beihang University — Beijing, China

Advisor: Prof. Baochang Zhang

**Master degree in Pattern Recognition and Intelligent System** — *2014.9 – 2017.6*

National Scholarship for Graduate Students (2017)

Beihang University — Beijing, China

**Bachelor degree in Automation Science and Electrical Engineering** — *2009.9 – 2013.9*

Beijing Outstanding Graduate Awards (2013)

## Research Interests

Computer Vision and Machine Learning, including 3D Pose Estimation, Multi-/Cross-modal Learning, Semi-/Self-Supervised Learning, Binary Neural Networks.

## Professional Services

I am an organizer of 6th HANDS workshop (in conjunction with ECCV2022). and a reviewer for various conferences and journals including CVPR, ICCV, ECCV, AAAI, IJCAI, IEEE TMM, IEEE SMC.

## Selected Publications

My name in **bold**, # indicates equal contribution.

- **Linlin Yang**, Shicheng Chen and Angela Yao. SemiHand: Semi-supervised Hand Pose Estimation with Consistency[C]. *International Conference on Computer Vision (ICCV)*. 2021.
- **Linlin Yang#**, Shile Li#, Dongheui Lee and Angela Yao. Aligning Latent Spaces for 3D Hand Pose Estimation[C]. *International Conference on Computer Vision(ICCV)*. 2019.
- **Linlin Yang** and Angela Yao. Disentangling Latent Hands for Image Synthesis and Pose Estimation[C]. *IEEE Conference on Computer Vision and Pattern Recognition(CVPR)*. 2019.
- Shihao Zhang, **Linlin Yang**, Michael Bi Mi, Xiaoxu Zheng, Angela Yao. Improving Deep Regression with Ordinal Entropy[C]. *International Conference on Learning Representations (ICLR)*. 2023.
- Ziwei Yu, **Linlin Yang**, You Xie, Ping Chen, Angela Yao. UV-Based 3D Hand-Object Reconstruction with Grasp Optimization[C]. *British Machine Vision Conference (BMVC)*. 2022.
- Kerui Gu, **Linlin Yang**, Angela Yao. Dive Deeper Into Integral Pose Regression[C]. *International Conference on Learning Representations (ICLR)*. 2022.
- Ziwei Yu, **Linlin Yang**, Shicheng Chen, Angela Yao. Local and Global Point Cloud Reconstruction for 3D Hand Pose Estimation[C]. *British Machine Vision Conference (BMVC)*. 2021.
- Kerui Gu, **Linlin Yang** and Angela Yao. Removing the Bias of Integral Pose Regression[C]. *International Conference on Computer Vision (ICCV)*. 2021.
- Li'an Zhuo, Baochang Zhang, **Linlin Yang**, Hanlin Chen, Qixiang Ye, David Doermann, Rongrong Ji, Guodong Guo. Cogradient Descent for Bilinear Optimization[C]. *IEEE Conference on Computer Vision and Pattern Recognition(CVPR)*. 2020.

## Projects

**- Learning with Less Labels for Pose Estimation**

Instead of seeking more accurate labelled data, we aim to find auxiliary information to aid the representation learning and relieve the burden of annotation for 3D pose estimation. Especially, we explore to use consistencies within the data itself to act as a label for learning.

**- Training with Multi-Modal Data for Pose Estimation**

Real-world data usually comes with multiple modalities. We would like to explore the advantages of different modalities and exploit them for different application scenarios. Moreover, as modalities are representations in different aspects, we aim to explore cross-modal prediction and additional modalities as auxiliary information.

**- Modeling Ambiguity with Generative Models for Pose Estimation**

For 3D pose and shape estimation, multiple solutions are often feasible due to ambiguities like occlusion, depth ambiguity and annotation error. However, existing benchmarks and (deterministic) methods only provide one solution. Instead, we aim to find possible solutions with generative models based on the input evidence.

**- Interpreting and Improving Deep Models for Pose Estimation**

State-of-the-art pose estimation methods perform impressively on benchmarks but are difficult to compare beyond differences in average end-point-error (EPE). Averaged results on large-scale benchmarks depend on the underlying data distribution and tend to obscure the behaviour of pose estimation systems. As such, we are motivated to find alternative ways to interpret and diagnose existing methods and eventually improve the methods accordingly.

**- Compressing and Searching Deep Models for Edge Devices**

With the rapid development of deep learning, the performance of deep models far exceeds that of early methods with the support of large-scale datasets and complex network structures. However, deep models are often difficult to deploy on edge devices like mobile or embedded devices. Our goal is to either directly search for edge-device-friendly models or compress and quantize existing deep models for edge devices.