Mengdi Wang

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wmd0701.github.io · github.com/wmd0701
Python (deep learning) · C# (Unity)

Education

Technical University of Munich, *PhD* 2022.08 - now

- **Group**: Chair of Human-Centered Technologies for Learning
- **Focus**: collaborative learning (federated & split learning), vision (style transfer), general deep learning

ETH Zurich, *Master in Computer Science* 2019.09 - 2022.07

- **Key courses**: computational statistics, advanced machine learning, physically-based simulation in computer graphics, probabilistic artificial intelligence, hardware acceleration for data processing
- **Thesis**: Exploration of Deep Features for Neural Style Transfer

Technical University of Munich, *Bachelor in Informatics: Games Engineering* 2016.09 - 2019.07

- **Thesis**: Porting MLEM Algorithm for Heterogeneous Systems

Experience

Technical University of Munich, Chair HCTL, research assistant 2022.08 - now

- Developed and implemented novel collaborative learning paradigms (TurboSVM-FL and CycleSL) that significantly improve model performance without incurring any client burden or data transfer
- Developed a novel iris recognition method leveraging style features, demonstrating superior performance and robustness compared to existing approaches, and proposed the use of style transfer for iris privacy preservation

ETH Zurich, Computer Graphics Laboratory, research student 2022.02 - 2022.07

- Investigated various factors influencing the 2D-to-3D stylization process utilizing differentiable renderer
- Proposed guidelines for style feature decomposition and controlling stroke granularity, and introduced a novel way to align reshaping and texturing results

Selected First-Author Publications

- **Trade-Offs in Privacy-Preserving Eye Tracking Through Iris Obfuscation: A Benchmarking Study**. Proceedings of the 25th International Conference on Digital Signal Processing (2025)
- **Iris Style Transfer: Enhancing Iris Recognition with Style Features and Privacy Preservation through Neural Style Transfer**. Proceedings of the ACM on Computer Graphics and Interactive Techniques (2025)
- **TurboSVM-FL: Boosting federated learning through SVM aggregation for lazy clients**. Proceedings of the AAAI Conference on Artificial Intelligence (2024)

Selected Projects

- CloudVis: Visualized large-scale atmospheric data dynamically in Unity with user interaction
- SplashyWaves: Implemented water splashing/sloshing in container with position-based dynamics resolver (PBD), allowing large time steps suitable for real-time applications
- Kings-of-Dominia: Implemented a computer game emulating the physics-based domino toppling game, supporting multiple platforms with touch-screen operations

Others

- Languages: Chinese (mother tongue), English (C1), German (B2 - C1)
- Teaching: serious games in XR, recent advances in privacy, introduction to programming and data processing
- Bachelor in Accounting (2011.09 - 2015.07), machine building apprentice (2014.12 - 2015.02), cost accounting internship (2012.07 - 2012.08), Certified Management Accountant (CMA), student performance award for excellent scores on CMA examination (2013)