
# Yue Chen

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## SHORT PROFILE

Inventive computer science graduate with over three years of practical experience in machine learning and data science. Experienced in leading multinational student research teams to address advanced machine learning problems. Dedicated to developing AI to address real-world challenges.

## EDUCATION

Oct 2021 – Nov 2023

**M.Sc. in Computer Science (Robotics, Cognition, Intelligence)**
Technical University of Munich (TUM), Germany

- Specialization: Machine Learning, Computer Vision, Data Science
- Master thesis: *Neural Scene Decomposition for Accurate Light and Material Reconstruction via Physically-Based Global Illumination Estimation* (grade 1,7)
- Coursework in German and English
- Final grade: 1,8

Oct 2017 – Sep 2021

**B.Sc. in Mechanical Engineering**
Technical University of Munich (TUM), Germany

- Specialization: AI, Automotive Technology, Automatic Control
- Bachelor thesis*: Investigation of Graph Neural Network Approaches in Gear Transmission Synthesis* (grade 1,3)
- Coursework in German
- Final grade: 2,5

## RESEARCH & PROJECTS

Feb 2023 – Nov 2023

**Neural Scene Decomposition for Accurate Light and Material Reconstruction via Physically-Based Global Illumination Estimation**
Master Thesis Student, Visual Computing & AI Lab, TUM
*Project page: www.yue-c.de/neural-inverse-rendering/*

- Research and development of 3D deep learning models using PyTorch to reconstruct accurate object material and environmental lighting from RGB images
- Construction of a synthetic dataset with over 2000 samples using Blender API
- Implementation of neural networks in Python and advanced rendering algorithms in C++, enhancing relight image quality by 45%

Apr 2022 – Nov 2022

**Neural Radiance Field Factorization**
Project Lead, Visual Computing & AI Lab, TUM

- Leadership and coordination of a three-member research team employing Agile methodology for efficient project management
- Organization of regular group meetings and presentations to stakeholders
- Algorithm refinement and optimization, reducing data processing time by 95% and improving relight image quality by 30%

Sep 2021 – Mar 2022

**Neural 3D Visual Grounding with GNNs and Attention**
Algorithm Developer, Visual Computing & AI Lab, TUM

- Collaboration on the development of a deep learning model for object localization based on linguistic descriptions
- Testing and comparison of semantic segmentation models in accuracy and efficiency
- Improvement of 10% accuracy through the integration of GNNs and Transformers

Apr 2021 – Sep 2021

**Investigation of Graph Neural Network Approaches in Gear Transmission Synthesis**
Bachelor Thesis Student, Institute of Machine Elements, TUM

- Case Study on the application of GNNs in innovative gearbox design
- Standardization of unified graph format for gearbox data
- Development and testing of GNN models for classification and prediction tasks

Oct 2020 – Feb 2021

**Physics-Informed Machine Learning for Rogue Wave Prediction**
Algorithm Developer, Thermo-Fluid Dynamics Group, TUM

- Investigation of neural networks as alternatives to numerical solvers
- Design of machine learning algorithms using MATLAB to predict rogue waves
- Strategy development and collaboration within a multidisciplinary team

## EXTRACURRICULAR ACTIVITIES

Sep 2018 – Nov 2018

**Mathematics Teaching Assistant**
Technical University of Munich

- Management of tutoring sessions for over 50 students
- Performance of central presentations and individual tutoring

## SKILLS

ML Frameworks

- Extensive usage of PyTorch in multiple machine learning projects
- Highly skilled in NumPy, Pandas, Matplotlib, scikit-learn, TensorFlow
- Machine learning methods: Regression, Decision Tree, SVM, PCA, etc.
- Deep learning architectures: CNN, GNN, VAE, Transformer, NeRF, etc.

General IT Skills

- Proficiency in Python and LaTeX, competent skills in C++ and MATLAB
- Working knowledge of CI/CD, Git, SSH, Virtual Machine
- Operating System: Linux (Ubuntu), Windows, MacOS
- Engineering Software: CATIA V5, Blender, Mitsuba, Gurobi, Photoshop

Languages

- German – C1, formal education in German at TUM
- English – C1, extensively used in machine learning research and teamwork
- Chinese – mother tongues

## INTERSTES

- Research and development of most recent machine learning models
- Active outdoor enthusiast: skiing, snowboarding, hiking, basketball, photography