

Susu Hu

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EDUCATION

Master of Science in Computational Modelling and Simulation 2019 - 2023
Dresden University of Technology, Germany GPA 2.1

- Relevant coursework includes machine learning, computer vision, stochastic and probabilities, statistics, data visualisation
- Granted with SECAI scholarship for excellent students in artificial intelligence

Bachelor of Science in Logistics Engineering 2009 - 2013
Nanjing Agricultural University, China GPA 3.2/4.0

- Relevant coursework includes computer science basics, natural science and engineering basics
- Granted with merit student scholarship

THESIS

3D Neural Fields Learning, National Center for Tumour Disease Dresden, Germany Oct 2022 - May 2023

- Condition neural fields on latent vectors to better capture complex 3D shape for sparse and partial 3D reconstruction
- Principle component decomposition on latent vectors for non-rigid registration

WORK EXPERIENCE

Research assistant, National Center for Tumour Disease Dresden, Germany Nov 2022 - May 2023

- Implemented weakly supervised medical image segmentation on internal pancreas dataset for region-of-interest of biomarker extraction

Working student, Fraunhofer IPA, Stuttgart, Germany Apr 2022 - Sep 2022

- Automated 3D data acquisition and measurement from sensors
- Quantified the advantages of diverse sampling over uncertainty sampling in active learning for image labelling
- Evaluated different one-shot object tracking methods on internal dataset

Working student, Fraunhofer IPMS, Dresden, Germany Aug 2021 - Feb 2022

- Explored different neural network architectures, topologies and precision levels for the quantization of neural networks from 32-bit floating points to 8-bit and lower
- Optimized quantization based on the comparison of the performance metrics and hardware resources utilized

Working student, Robotron, Dresden, Germany Jun 2021 - Feb 2022

- Backend machine learning software development for computer vision tasks for industrial quality control
- Researched and evaluated state-of-the-art methods for given tasks and implemented with real-life dataset from customers and benchmarked results

PROJECTS

Gaussian processes and neural networks Sep 2020 - Mar 2021

Dresden University of Technology

- Studied Gaussian processes mathematical theories and implemented convolutional and non-convolutional Gaussian processes on image classification tasks
- Experimented with second derivative and first derivative optimization methods. Approximated posterior distribution via variational inference method (minimising KL-divergence) and exploited sparse Gaussian processes to improve computation efficiency.

Tractography scientific visualisation Apr 2020 - Sep 2020

Dresden University of Technology

- Studied techniques of tractography and implemented scalar and spherical colour mapping on brain fiber tracts based on diffusion measurement of free water in the brain

PUBLICATIONS

Layer Sensitivity Aware CNN Quantization for CIM Architectures

2022 International Conference on Soft Computing & Machine Intelligence

SKILLS

Python: PyTorch, OpenCV, open3D, Pandas, Keras, TensorFlow, scikit-learn, Huggingface, FastAPI, etc.

DevOps: Git, Linux, Docker, Microsoft Azure, slurm

Others: C/C++, blender, R, SQL

LANGUAGES

English - C1, German - A2, Chinese - native speaker