Susu Hu

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EDUCATION

Dresden University of Technology, Germany **2019 - 2023**

Master of Science in Computational Modelling and Simulation **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

Nanjing Agricultural University, China **2009 - 2013**

Bachelor of Science in Logistics Engineering **GPA 3.2/4.0**

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

THESIS

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 vetoers for non-rigid registration

WORK EXPERIENCE

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

- Weakly supervised medical image segmentation

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
- Compared different one-shot object tracking methods

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

- Explored different neural network architectures, topologies and precision levels to optimize the quantization from 32-bit floating points to 8-bit and lower
- Compared 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
Others: C/C++, blender, R, SQL

LANGUAGES

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