

# 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 ATLAS brain lesion dataset and internal pancreas dataset

**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