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## EXPERIENCE

**Aarhus University** November 2022 - present
*Department of Clinical medicine* *Aarhus, Denmark*

· PhD-Student

Deep learning, Computer vision, 3D

**Aarhus University** September 2023 - present
*Department of computer science* *Aarhus, Denmark*

· Graduate teaching assistant on the course "Deep Learning for Visual recognition"

· Supervision of MSc students. Fine-tuning in progress.

Project: CBCT-to-synthetic CT Translation using Stable Diffusion

**University of Cambridge** March 2024 - June 2024
*Cavendish Laboratory (Department of Physics) and department of Oncology* *Cambridge, England*

· Visiting scholar.
· Development of two deep learning models

Diagnostics of brain tumor type

Predicting synthetic treatment plans

**Aalborg University Hospital** September 2021 - June 2022
*Department of medical physics* *Aalborg, Denmark*

· Research Master student.
· Contributed to a PhD project in 3D vision.

## EDUCATION

**Aarhus University** November 2022 - Present

· Doctor of Philosophy in Deep Learning for Computer Vision in neuro-oncology, PhD.
· ViT and CNN for segmentation of different brain regions DSCs (0.89-0.97) across various brain regions for both model
· Swin Transformer for dose prediction, baseline with SSIM 0.92 with median of 0.95. Gamma pass rates (3mm/3% criteria) (accuracy) median 99.82 93 to 100 % within CTV

**Aalborg University** September 2017 - June 2022

· Masters, Biomedical engineering and informatics, Cand.polyt, MSc.

Deep learning

3D computer vision

Neuroscience

· Bachelor in Biomedical Engineering, BSc.

Signal processing

Neuroscience

**Hasseris Gymnasium** August 2015 - June 2017

· High school

## SKILLS

| | |
|---|---|
| · **Languages:** | Python, C, CUDA and Java |
| · **Methods:** | Machine learning, deep learning, signal processing, Computer vision |
| · **Deep Learning:** | CNNs, Vision transformers, and Diffusion models |
| · **Frameworks:** | Pytorch, Tensorflow |
| · **Data Structures:** | Images (2D, 3D), signals and text |
| · **Soft Skills:** | Project management, goal oriented, time management, problem solving and interdisciplinary collaboration |

## TEACHING

**Aarhus University** August 2023 - present
*Department of computer science* *Aarhus, Denmark*

· **Teaching Assistant**: course *"Deep learning for visual recognition."*

**Aarhus University** April 2023 - September 2024
*Department of clinical medicine* *Aarhus, Denmark*

· **Instructor**: Course *"Data science for health"*.

**Aarhus University Hospital** September 2023 - December 2023
*Danish center for particle therapy* *Aarhus, Denmark*

· **Instructor**: Course *"Deep learning in clinical practice."*

## STUDENTS

**Current students** January 2025 - June 2025

· Casper Dam Larsen, MSc. Computer Science and Software engineer at Trifork, w. Prof Ira Assent

· Niklas Aavad, MSc. Computer Science and Software engineer at Uber, w. Prof Ira Assent

## COURSE DEVELOPMENT

**Aarhus University**
*Department of computer science*

· Curriculum extension and lab exercise development on transformers and diffusion models.

**Aarhus University**
*Department of clinical medicine*

· Instructor and developer of data science course which included deep learning theory and application in clinical settings.

## PUBLICATIONS

**Published**

· *Team work makes the dream work: An ensemble learning approach for segmentation with Convolutional Neural Networks and Vision Transformers, A. Andresen [et al.] (sciencesconf.org:iccr2024:526239).*

· *3D Swin Transformer for Patient-Specific Proton Dose Prediction of Brain Cancer Patients, A. Andresen [et al.]* . - In review

**In Review / In Preparation**

· *Clincal Assessment of approaches for segmentation with Convolutional Neural Networks and Vision Transformers* - Paper in review

· *Quality assurance of 3D swin based proton dose prediction model* - Paper in review

## VOLUNTEERING

**Trygfondens familiehus** November 2023 - December 2024
*Aarhus, Denmark*

· Volunteer work with Trygfondens Familiehus, assisting families with seriously ill children who are away from home for treatment.

## LANGUAGES

**Danish**
*Native*

· Written and spoken

**English**
*Fluent*

· Written and spoken

**German**
*Beginner*

· Written and spoken

## INDEPENDENT PROJECTS

**3D Generative adverserial network in C/CUDA** November 2024 - April 2025

· Language: C and CUDA
· Optimization of performance and processing, while reducing computational load.

**3D Autoencoder model in C/CUDA** April 2024 - December 2024

· Language: C and CUDA
· Optimization of performance and processing, while reducing computational load.

**Self adapting 3D vision transformer for segmentation** January 2023 - September 2023

· Language: Python
· Vision transformer model in PyTorch.

Automated model size and parameter choices based on input data.

Distributed training