

André Pedersen

SENIOR MACHINE LEARNING ENGINEER · PHD IN MEDICAL TECHNOLOGY · MASTER OF SCIENCE

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Summary

Seasoned open-source advocate motivated by developing solutions that people actually use. 6+ years of software development experience, using programming languages like Python, C++, Dart, and JavaScript. 6+ years of experience using machine learning frameworks like TensorFlow and PyTorch. Strong theoretical background and practical repertoire in advanced topics such as 3D computer vision, deep learning, real-time video recognition, large language models, and generative AI. Experience developing software for desktop (Qt6), mobile (Flutter), and web (Streamlit/React) applications. Established researcher with 20+ published research articles, 340+ citations (13 h-index), and 3 open-access dataset contributions.

Education

Norwegian University of Science and Technology (NTNU)

Trondheim, Norway

PHD IN MEDICAL TECHNOLOGY - ARTIFICIAL INTELLIGENCE FOR COMPUTATIONAL PATHOLOGY

Oct. 2019 - Oct. 2023

- Defended thesis Nov. 2024. Published 17 journal publications, 1 conference paper, and 1 book chapter in thesis period.

UiT: The Arctic University of Norway

Tromsø, Norway

MSC IN APPLIED PHYSICS AND MATHEMATICS - SPECIALIZATION IN MACHINE LEARNING & STATISTICS

Aug. 2014 - Jun. 2019

- Industry project together with SINTEF on AI for cancer diagnostics. Contributed to publication in scientific journal ([paper](#)).

Experience

Sopra Steria, Applications

Trondheim, Norway

SENIOR MACHINE LEARNING ENGINEER

Oct. 2023 - Present

- Data scientist/engineer in industry project with Equinor developing chatbot using Azure OpenAI, Vanna, Azure AI Search, React, PostgreSQL.
- Tech Lead in research project with the UNICAN team at St. Olavs hospital and NTNU to develop no-code AI solutions for digital pathology.
- Team Lead in project with Autility, in charge of three summer interns, developing an LLM-based prototype for environmental grading of buildings.
- Developed web applications for 2 medical image analysis solutions and 2 chatbots using Gradio/Streamlit and Hugging Face Spaces ([demos](#)).

SINTEF, Health Research

Trondheim, Norway

RESEARCH SCIENTIST

May 2022 - Nov. 2023

- Key contributor to the FastPathology open software project in C++ using Qt5 and FAST ([code](#)).
- DevOps responsible for open-source clinical software, Raidionics, enabling automatic segmentation of pre- and postoperative brain tumors and generation of standardized clinical report ([website](#), [code](#)).
- Developed open software plugin enabling cloud-based deployment of AI-solutions for digital pathology ([code](#)).
- Developed 4 applications demonstrating AI-based medical 3D image segmentation, using Gradio and hosted on Hugging Face Spaces ([demos](#)).
- Consulted on numerous research projects and grant applications, either through tutoring colleagues, implementing components in algorithm or deployment design, statistical analysis in assessment of trained models, or development of accessible technologies.
- Developed open python package to enable gradient accumulation in TensorFlow 2 ([code](#)).
- Codeveloped a python package to enable rapid stain normalization for histopathological images, supporting PyTorch, TF, and NumPy ([code](#)).

SINTEF, Health Research

Trondheim, Norway

MASTER OF SCIENCE

Jan. 2019 - May 2022

- Lead SINTEF-funded project to enable code-free development and deployment of deep segmentation models for computational pathology ([paper](#)) - trained pathologist with no background in programming or deep learning to train and deploy his own convolutional neural networks for semantic segmentation of gigapixel histopathological images.
- Contributed to several funding applications on various topics with focus on software as a medical device and use of AI for medical applications. Contributed strongly to the AI, software, and statistics work packages, of which multiple achieved funding from the Norwegian Research Council.
- Performed statistical analysis and aided in method development and consulted in research activities, mainly focused on machine learning and computer aided designs, such as: 1) Supervised segmentation of brain tumors in MRIs - 5 separate papers (ex: [paper](#)), 3) Unsupervised detection of adverse events from free-text ([paper](#)), and 4) Responsible for statistical analysis for nanobubble-guided cancer treatment study ([paper](#)).

SINTEF, Health Research

Trondheim, Norway

SUMMER INTERNSHIP

Jun. 2018 - Aug. 2018

- Implemented algorithms and trained AI models for 3D semantic segmentation of medical volumetric data (CT) using TensorFlow.

Teaching

NTNU/SINTEF

SUPERVISOR

Trondheim, Norway

Jan. 2020 - Present

- Technical contributor to 5 PhD projects at ISB/IKOM/IDI at NTNU. (Co-)supervisor of 5 Master's students in Computer Science at NTNU.

UiT: The Arctic University of Tromsø

STUDENT TEACHING ASSISTANT

Tromsø, Norway

Aug. 2017 - Nov. 2018

- Lead programming workshops in Python, each fall 2017 and 2018 for the courses: FYS-1001 Mechanics and FYS-2006 Signal Processing.

Selected Certificates

May 2024	Microsoft Certified: Azure AI Engineer Associate , Microsoft https://learn.microsoft.com/api/credentials/share/en-us/andreped/35ced8aedc8c68aa	Online Exam
May 2024	Microsoft Certified: Azure Data Scientist Associate , Microsoft https://learn.microsoft.com/api/credentials/share/en-us/andreped/FF8D2984FD42E2F	Online Exam
Jan 2024	Microsoft Certified: Azure Data Fundamentals , Microsoft https://learn.microsoft.com/en-us/users/andreped/credentials/35A98395F0A43745	Online Exam
May 2024	Machine Learning in Production , DeepLearning.AI https://coursera.org/share/5cec670e583fffa248b3774a40abe066	Online Exam
Jan 2024	Generative AI with Large Language Models , DeepLearning.AI https://www.coursera.org/account/accomplishments/verify/GTFN2BBZC2SK	Online Exam
Jan 2023	TensorFlow Developer Certificate , Google https://www.credential.net/24a998b0-da8e-4c9e-aaf7-23cd2bfd06b3	Online Exam

Selected Datasets

AeroPath: An airway segmentation benchmark dataset with challenging pathology ([data](#), [demo](#))

K-H Støverud, D Bouget, A Pedersen, ..., E F Hofstad

Zenodo

Nov. 2023

LyNoS: A multilabel lymph node segmentation dataset from contrast CT ([data](#), [demo](#))

D Bouget, A Pedersen, J Vanel, H O Leira, & T Langø

GitHub

Mar. 2022

140 HE and 111 CD3-stained colon biopsies of active and inactivate inflammatory bowel disease with epithelium annotated: the IBDColEpi dataset ([data](#), [demo](#))

H S Pettersen, I Belevich, E S Røyset, ..., & A Pedersen

DataverseNO

Des. 2021

Selected Publications (n=24, citations=341, h-index=13)

FastPathology: An open-source platform for deep learning-based research and decision support in digital pathology ([paper](#), [code](#))

A Pedersen, M Valla, A M Bofin, ..., & E Smistad

IEEE Access

May 2021

H2G-Net: A multi-resolution refinement approach for segmentation of breast cancer region in gigapixel histopathological images ([paper](#), [code](#), [demo](#))

A Pedersen, E Smistad, T V Rise, ..., & M Valla

Frontiers in Medicine

Sep. 2022

Code-Free Development and Deployment of Deep Segmentation Models for Digital Pathology ([paper](#), [code](#))

H S Pettersen, I Belevich, E S Røyset, ..., & A Pedersen

Frontiers in Medicine

Jan. 2022

High performance neural network inference, streaming, and visualization of medical images using FAST ([paper](#), [code](#))

E Smistad, A Østvik, & A Pedersen

IEEE Access

Des. 2019

Meningioma segmentation in T1-weighted MRI leveraging global context and attention mechanisms ([paper](#), [code](#))

D Bouget, A Pedersen, S A M Hosainey, ..., & I Reinertsen

Frontiers in Radiology

Sep. 2021