**Yaolin Ge**

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**A picture containing person, posing

Description automatically generatedSummary**

* Software developer at Sandvik Coromant Trondheim.
* Ph.D. in statistics from the Department of Mathematical Sciences at NTNU.
* Experience with data-driven machine learning software system development.
* Experience with robotic system development.

# Experience

**Sandvik Coromant Trondheim Trondheim, Norway**

*Software developer, Dept. Sensorized Tools* Sept. 2023 – present

* Design and implement the machine learning algorithms for the anomaly detection system.
* Deploy and integrate the real-time inference systems into our customized embedded systems.
* Validate and optimize the algorithm to improve its compatibility with various devices.
* Analyze and document the overall performance of the system.

**Norwegian University of Science and Technology Trondheim, Norway**

*Ph.D, Dept. Mathematical Sciences* Aug. 2020 – Sept. 2023

* Design and implement multi-scale data-driven machine learning software systems for remote sensing.
* Optimize the edge computing using GPU-accelerated parallel programming using CUDA, OpenCL etc.
* Deploy and integrate the systems onboard an unmanned robot for several successful field experiments.
* Collaborate and communicate closely with multiple customers including SINTEF Ocean, AURLab NTNU, LSTS, MARETEC for knowledge dissemination to foster novel ideas.
* Document and publish the results to relevant stakeholders and clients and share knowledge with the public. Five papers accomplished.

# Peking University Beijing, China

*Summer research student at AI+Art Lab, PKU* Jul. 2019 – Aug. 2019

* Studied machine learning and deep learning principles, particularly computer vision techniques.
* Applied and integrated motion-capturing algorithms [*OpenPose*](https://cmu-perceptual-computing-lab.github.io/openpose/web/html/doc/index.html)onboard a humanoid robot. [[video](https://www.youtube.com/watch?v=kmty0bGUTb8)]
* Demonstrated the performance of the algorithms with a robot dance show. [[video](https://www.youtube.com/watch?v=LG3HtLOEfPs)]

**Education**

**Norwegian University of Science and Technology Trondheim, Norway**

*Ph.D. candidate, Dept. Mathematical Sciences*  Aug. 2020 – Sept. 2023

Thesis project: Developing multi-scale machine learning software systems for data analytics purposes to boost the autonomy of robotic oceanographic sampling.

**KTH Royal Institute of Technology Stockholm, Sweden**

*MSc, Maritime Engineering,* G.P.A. 4.625/5.00 Aug. 2019 – Jul. 2020

Thesis project: Developed an embedded software system to estimate and predict the location of robots.

**Norwegian University of Science and Technology Trondheim, Norway**

*MSc, Marine Technology,* G.P.A. 3.93/4.00 Aug. 2018 – Jun. 2019

Relevant project: Developed numerical prediction system for the lifting forces of a propeller.

**University of Strathclyde Glasgow, United Kingdom**

*International Student Exchange Program,* G.P.A. 3.85/4.00Sept. 2017 – Jan. 2018

Relevant project: Analyzed structural static and dynamic behavior using the finite element method.

**Skills & Interests**

**Programming:** Python, C#, Git, C/C++, Javascript, Bash scripting, Matlab, SQL, R, Julia

**Frameworks:** Blazor, React, Django, Flask, .NET, Pytorch, OpenCL, CUDA, Numpy, Pandas

**Software**: Visual Studio, VS Code, PyCharm, Microsoft Office365, Anaconda, Adobe Photoshop/Illustrator

**Language:** English (full professional), Norwegian (full professional), Mandarin (native)

**Interests:** Outdoor life (camping, sailing, skiing, hiking ...), Taekwondo, Dance, Music, Travelling

**Awards & Competitions**

2024 Smart City Hackathon 2024, 1st place, Warsaw, Poland

2023 NTNUI Yngling Sailing Cup, 2nd out of 12, Norway

2021 Taekwondo WT – [NM](https://www.sportdata.org/kampsport/set-online/popup_main.php?popup_action=results&vernr=557&active_menu=calendar) 2021, 3rd in KAMP, 4th in Poomsae, Norway

2019 Best Popular Prize, AI + Art in Robot Dancing Competition, PKU, China

**Extra-curricular**

**Taekwondo instructor Trondheim, Norway**

*NTNUI Taekwondo* Jan. 2020 – present

* I am a Taekwondo instructor who plans and adapts training for all members.
* Competed in the Norwegian Championships in 2021, won 1 bronze medal in combat senior M 74+.

**Salsa line instructor Trondheim, Norway**

*NTNUI Dans*  Sept. 2021 – present

* I am involved in the organization of the weekly dance classes.

**Certificates**

**Deep Learning Specialization** acquired: 15th April 2020, Coursera

*This is offered by deeplearning.ai, covers basic and advanced topics in deep learning with practical programming tasks, which enable me to build deep learning models and solve real-world problems.*

**Fundamentals of Accelerated Computing with CUDA Python** acquired: 20th-April-2022, NVIDIA

*I have learned about how to speed up the calculation using GPU programs using CUDA.*

**CS50** acquired: 26th-March-2023, Harvard University

*CS50 is an introductory computer science course taught at Harvard University that covers fundamental concepts in programming, algorithms, data structures, and web development.*

**Reference**

Jo Eidsvik Dept. of Mathematical Sciences, NTNU

Professor [jo.eidsvik@ntnu.no](mailto:jo.eidsvik@ntnu.no) +47 7359 0153

Tore Mo-Bjørkelund Skarv Technologies AS

Head of Operations [tore.mo-bjorkelund@ntnu.no](mailto:tore.mo-bjorkelund@ntnu.no) +47 9028 8012

**Publication**

[1] Yaolin Ge, André Julius Hovd Olaisen, Jo Eidsvik, R. Praveen Jain, and Tor Arne Johansen. Long-horizon informative path planning with obstacles and time constraints. IFAC-PapersOnLine, 55(31):124–129, 2022. 14th IFAC Conference on Control Applications in Marine Systems, Robotics, and Vehicles CAMS 2022.

[2] Yaolin Ge, Jo Eidsvik, Tore Mo-Bjørkelund. 3D Adaptive AUV Sampling for the Classification of Water Masses. IEEE Journal of Oceanic Engineering, 2023.

[3] Yaolin Ge, Jo Eidsvik, André Julius Hovd Olaisen. Robotic exploration of a river plume system using a flexible cost valley concept. Field Robotics, 2023 [submitted]