**Yaolin Ge**

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**A picture containing person, posing

Description automatically generatedSummary**

* Ph.D. candidate working on intelligent ocean autonomy project at NTNU.
* Experience with machine learning software system development and robotic operations.
* Practice data analytics and agile development in a daily routine.

**Experience**

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

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

* Designed and implemented multi-scale machine learning software systems for autonomous underwater vehicles for intelligent ocean sampling purposes using advanced path planning algorithms.
* Deployed and integrated the systems onboard unmanned underwater robots for several successful field experiments in Trondheimsfjorden, Norway, and the Atlantic Ocean.
* Collaborate and communicate closely with multiple customers including SINTEF Ocean, AURLab NTNU, LSTS, and MARETEC for knowledge dissemination to foster novel ideas.
* Document and publish the results to relevant stakeholders and clients and share knowledge with the public. Three papers were 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 in the statistics group, Dept. Mathematical Sciences*  Aug. 2020 – present (expected Aug. 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.

**Jiangsu University of Science and Technology Zhenjiang, China**

*BSc, Naval Architecture and Ocean Engineering,* G.P.A. 3.89/4.00**,** Rank: 2/230Sept. 2014 – Jun. 2018

Thesis project: Analyzed the results of a numerical solver to study the effect of Vortex-Induced-Vibration on slender body structures such as a steel catenary riser (SCR) in the deep sea.

Awards: National Scholarship (top 1%), First prize in Academic Competition in Mechanics knowledge,

**Skills & Interests**

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

**Frameworks:** Numpy, Pandas, Scipy, Matplotlib, Plotly, CUDA

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

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

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

**Awards & Competitions**

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

2017 Merit Student, MOE, China

2017 First Prize, Academic Competition in Mechanics Knowledge, JUST, China

2016 – 2017 National Scholarship, MOE, 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.

**Courses & 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

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**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. [accepted and underproduction]

[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 and under review]