Yaolin Ge

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Summary

- Ph.D. candidate in the statistics group at Dept. of mathematical sciences at NTNU.
- Experience with data-driven machine learning software system development.
- Experience with digital signal processing, data analytics and statistics.
- Practice agile methodologies and test-driven development in a daily routine.

Experience

Norwegian University of Science and Technology **Trondheim, Norway**
Ph.D. candidate, Dept. Mathematical Sciences Aug. 2020 – present

- Design and implement multi-scale data-driven machine learning software systems for remote sensing.
- Optimize 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, 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* onboard a humanoid robot. [video]
- Demonstrated the performance of the algorithms with a robot dance show. [video]

Education

Norwegian University of Science and Technology **Trondheim, Norway**
Ph.D. candidate, 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. 3.85/4.00 Sept. 2017 – Jan. 2018
Relevant project: Analyzed structural static and dynamic behavior using the finite element method.

Skills & Interests

Programming: Python, Git, C/C++, Bash scripting, Matlab, SQL, R, Julia
Frameworks: TensorFlow, CUDA, OpenCL, Numpy, Pandas, Scipy, Matplotlib, Plotly
Software: PyCharm, QGIS, Microsoft Office365, Anaconda, VS Code, Adobe Photoshop/Illustrator
Language: English (full professional), Norwegian (conversational), Mandarin (native)
Interests: Outdoor life (camping, sailing, skiing hiking ...), Taekwondo, Dance, Music, Travelling

Awards & Competitions

2023	NTNUI Yngling Sailing Cup, 2nd out of 12, Norway
2021	Taekwondo WT – NM 2021, 3rd in KAMP, 4th in Poomsae, Norway
2019	Best Popular Prize, AI + Art in Robot Dancing Competition, PKU, China
2016	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.

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 Professor	Dept. of Mathematical Sciences, NTNU jo.eidsvik@ntnu.no	+47 7359 0153
Geir-Arne Fuglstad Associate Professor	Department of Mathematical Sciences, NTNU geir-arne.fuglstad@ntnu.no	+47 7359 1699
Tore Mo-Bjørkelund Head of Operations	Skarv Technologies AS 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 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]