

Yaolin Ge

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Ref. No. IV-91/20: Ph.D. in Model-based control and optimization for ship maneuvering in complex spatial environment

This is Yaolin GE, a final year master student from the major of underwater robotics at NTNU-KTH, expected to graduate by Jun 2020, a creative and enthusiastic explorer who really enjoys making a difference in the maritime field as that NTNU does. My background so far has been quite interdisciplinary, spanning the border of ship operations to underwater robotics, and the potential to continue this sort of research training is what first attracted me to pursue this doctoral program at NTNU, pursuing this doctoral program with its field in complex maritime maneuvering systems, will allow me to learn from professors at the top of this exciting field. This eye-opening doctoral program will enable me to pursue my research interests to a much greater depth while also expanding my future career opportunities within the autonomous marine industry. It is also worth mentioning that joining a community of other like-minded individuals will be a valuable chance for collaboration and personal development. I believe that I am a highly motivated student and also a well-qualified applicant.

Artificial Intelligence is playing an increasingly important role in many industries and it will play a crucial role in the autonomous marine industry too. The doctoral program attracts me to engage even more via learning and implementing advanced technologies to enhance the smart autonomous ship operations for the autonomous shipping world.

As a result of the strong interest in exploring underwater robotics and deep learning, I urged myself to learn more under an advanced study environment, for which I then pursued my dual-degree master's study within Marine Technology at NTNU-KTH. The interdisciplinary study and research environment rewarded me a lot in terms of practical skills and personal growth. I have been involved in the KTH Formula Student during the last semester, in which I developed the obstacle avoidance model for the Formula car to conduct certain manoeuvres based on the sensor fusion model using Lidar and Camera, together with Radar. I do believe that this experience did pave the way for this doctoral program even more. Apart from the formal curricular education, I did also push myself forward to gain some fruitful deep learning skills using powerful MOOC-platforms such as Coursera and IEEE CEU. Thankfully, those experiences enhanced my ability to a deeper level to utilize AI to solve practical problems such as logistic regression, computer recognition and classification etc., I feel much more confident about my skillset and mindset. At present, I am conducting my master's degree project on the signal processing part of the underwater navigation system for the range-doppler estimation objectives.

With this wide range of experiences, I have gradually developed a liking taste in the AI and the autonomous marine field. I develop motivation from the level of responsibility and independence required of a Ph.D. candidate and relish the opportunity to prove myself at this level.

To conclude, I expect to contribute to the practical researches with my professional knowledge and practical skills obtained from this doctoral programme at NTNU. With full confidence in me as well as the professional training you provide in the program, I believe that my plan will be realized any time soon. Thank you very much for your time and consideration

Sincerely,

Yaolin Ge