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Object Detection in Marine Applications using Thermal Cameras

Thesis Background

Object detection helps to assign objects and motions into different categories (such as humans, boats, or trucks) based on digital vision and image processing. Thermal cameras are improving rapidly, overcoming their traditional limitations by combining it with other methods of object detections and visions processing toolkits. Artificial intelligence (AI) can be implemented in visions processing toolkits to enhance the performance of the cameras.

In this thesis we will look deeper into thermal cameras recent developments in object detections.

Thesis scope of work

- Project Assessment: evaluate required technologies, quality of data, planning for the project
- Pre-processing: cleaning and connecting the database, build the base framework
- Automation development: Model development and optimizing the solution
- Verification and Validation: testing in operational environment, verify the solution, go back to the development stage if required
- Closing and Demo of results: Hand-over, possible expansion for similar cases

Qualifications & Required Documents

- Two students with a background in mechatronics, signal and systems, automotive engineering or similar
- Knowledge of machine learning is considered advantageous
- Programming, Matlab, Simulink

Please send your application including CV, Cover Letter, and Transcript of grades.

Practical information

Thesis Level: Master (30 ECTS points)

Language: English

Starting date: January 2019

Number of students: 2 students

Last application date: December 1st, 2018

Examiner proposal:

Contact

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About us

The Volvo Group is one of the world's leading manufacturers of trucks, buses, construction equipment and marine and industrial engines under the leading brands Volvo, Renault Trucks, Mack, UD Trucks, Eicher, SDLG, Terex Trucks, Prevost, Nova Bus, UD Bus, Sunwin Bus and Volvo Penta.

With Volvo Penta, a world-leading supplier of engines and complete drive systems for marine and industrial applications, you will be part of a global and diverse team of highly skilled professionals who works with passion, trust each other and embraces change to stay ahead. We make our customers win.



In new Technology Development, our mission is to develop and deliver new innovative solutions and driving Volvo Penta transformation towards future technology. We are a light setup with few own resources, but with a budget and mandate over a large number of appointed resources. We are an agile and scalable entity that adapt over time to reflect the changing needs. We deliver Technology strategy, Innovation and Mature technology ready for product projects.

Entity: AB Volvo Penta

State / Province: Västra Götaland

City/Town: Göteborg

Employment/Assignment Type: Thesis

Functional Area: Technology