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:**

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**Entity:** AB Volvo Penta
**State / Province:** Västra Götaland
**City/Town:** Göteborg
**Employment/Assignment Type:** Thesis
**Functional Area:** Technology