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How does AI solve the challenge of vessel draught mark readings?

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Draught mark readings are essential in understanding a vessel's exact displacement and load. This is, by nature, quite a subjective task that relies on the experience and tactics of the reader, further challenged by waves, vessel motions, and dirty or rusted hull that make the measurements difficult. Different observers may likely report different values. In 2019, the global maritime community launched the JoRes Joint Research Project, developing publicly available ship-scale validation cases for Computational Fluid Dynamics. Taking accurate draught measurements before the trials was critically important for the project. The JoRes team employed the following technique: videos were taken for each draught for about a minute, and then these videos were manually post-processed frame by frame, noting all crests and thoughts. To avoid a subjective judgement by a single expert, the same video was analysed by at least two experts independently. This was a time-consuming process, which led though to confident results. The recent development of enhanced deep learning processing has allowed practitioners to streamline the process significantly. Tymor-marine Ltd has recently developed a tool that analyses videos of the marks and gives draught readings within a few seconds with a confidence score. This tool was validated against the data obtained within the JoRes project. The validation process will be discussed in the paper.