**Research Proposal Form**

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| Name and Surname: Lee Pace |
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| Group: IT-SWD-6.2B |
| Research Title:  Marine Traffic Tracking Visualisation for future planning |
| Hypothesis and/or Research Questions:  Can a map be created showing marine traffic, so that with the growth for demand in the marine areas (e.g. offshore wind power plants) require some planning about the heavy marine traffic. With this project future allocation plans in marine about human and temporally activities can be placed in safe areas away from the heavy marine traffic.   1. What dataset is needed, and features are important for the creation of this prototype? 2. What types of techniques can be used for detection and recognition of vessels? 3. What evaluation techniques are needed to benchmark such a prototype? |
| Outline of Key Literature:  As Mentioned in Mustaffa, M. et. Al (2019), the data is possible to be collected is because all vessels are carrying Automatic Identification System (AIS) onboard which is divided into two categories’ which are ‘Class A’ which represents international ships with gross tonnage (GT) of 300 or more, and ‘Class B’ is carried by smaller vessels which are commercial vessels, the fishing sector and recreational sector. With AIS onboard these vessels several data can be gathered like the location, ship`s information, destination, registration, speed, vessel`s name and heading. This data is transmitted every 3 to 10 seconds and thanks to this, two vessels can detect each other and avoid possible collisions. For this project this data was captured and stored for 5 days straight and after the dataset was processed through various stages and the results where displayed with the help and the longitude and latitude. With this method the routes of vessels of 5 days was projected in a graph and after placed on a map. |
| Overview of Methodology:  First a study on existing datasets will be made and their fitness for this research will be determined. A prototype will be created following some tutorials to get more familiar with the techniques and methods for data visualization. After deciding different techniques, the prototype will be altered to fit the project needs. Finally, a custom dataset will be fed to the custom prototype and evaluated for further investigation. Several research questions will be formulated at the end of this project based on the findings of this research, thus serving as a basis for the dissertation. |
| Ethical Considerations:  Not all ships, boats or other structures can be tracked. |
| References:  Mustaffa, M., Ahmat, N.H. and Ahmad, S., 2015. Mapping Vessel Path of Marine Traffic Density of Port Klang, Malaysia using Automatic Identification System (AIS) Data. International Journal of Science and Research (IJSR), 4(11), pp.245-248. |