

Article
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Abstract: The proposed work aims to provide a path planning solution that use data about sea and weather conditions to find the optimal path the links 2 positions.**Keywords:** path planning; sea-state

1. Introduction

In recent years, robotics has been optimizing the monitoring and exploration of maritime and coastal scenarios through the use of multiple and sophisticated autonomous systems. This category includes the Autonomous Underwater Vehicles (AUV), underwater robots capable of completing missions autonomously, and the Autonomous Surface Vehicles (ASV), vehicles that rotate on the surface of the water without a crew. The application fields are various: geological prospecting, oceanographic monitoring, military sector, etc. Maritime navigation is an essential aspect of the shipping industry. Path planning in a maritime scenario is the process of determining the optimal route a vessel can take from the point of departure to the destination.

The goal of this paper is to propose a new path planning method that uses a probability map to influence the final path according to the sea-weather conditions. The focus will be on discussing the various challenges that arise in this area and the proposed solutions to overcome them. The method will be compared to some state-of-the-art techniques too.

1.1. State-of-the-art

TODO

1.2. Our contribution

TODO

2. Method

TODO

2.1. Input data

TODO

2.2. Algorithm

TODO

2.3. Communication

TODO

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3. Results

TODO

4. Conclusions

TODO

5. Results

This section may be divided by subheadings. It should provide a concise and precise description of the experimental results, their interpretation as well as the experimental conclusions that can be drawn.

5.1. Subsection

5.1.1. Subsubsection

Bulleted lists look like this:

- First bullet;
- Second bullet;
- Third bullet.

Numbered lists can be added as follows:

1. First item;
2. Second item;
3. Third item.

The text continues here.

5.2. Figures, Tables and Schemes

All figures and tables should be cited in the main text as Figure 1, Table 1, etc.



Figure 1. This is a figure. Schemes follow the same formatting. If there are multiple panels, they should be listed as: (a) Description of what is contained in the first panel. (b) Description of what is contained in the second panel. Figures should be placed in the main text near to the first time they are cited. A caption on a single line should be centered.

Table 1. This is a table caption. Tables should be placed in the main text near to the first time they are cited.

Title 1	Title 2	Title 3
Entry 1	Data	Data
Entry 2	Data	Data ¹

¹ Tables may have a footer.

The text continues here (Figure 2 and Table 2).

51



Figure 2. This is a wide figure.

Table 2. This is a wide table.

Title 1	Title 2	Title 3	Title 4
Entry 1 *	Data	Data	Data
	Data	Data	Data
	Data	Data	Data
Entry 2	Data	Data	Data
	Data	Data	Data
	Data	Data	Data
Entry 3	Data	Data	Data
	Data	Data	Data
	Data	Data	Data
Entry 4	Data	Data	Data
	Data	Data	Data
	Data	Data	Data

* Tables may have a footer.

Text.
Text.

52

53

5.3. Formatting of Mathematical Components54

This is the example 1 of equation:55

$$a = 1,$$
(1)

the text following an equation need not be a new paragraph. Please punctuate equations as regular text.5657

This is the example 2 of equation:58

$$a = b + c + d + e + f + g + h + i + j + k + l + m + n + o + p + q + r + s + t + u + v + w + x + y + z$$
(2)

Please punctuate equations as regular text. Theorem-type environments (including propositions, lemmas, corollaries etc.) can be formatted as follows:5960

Theorem 1. *Example text of a theorem.*61

The text continues here. Proofs must be formatted as follows:62

Proof of Theorem 1. Text of the proof. Note that the phrase “of Theorem 1” is optional if it is clear which theorem is being referred to. □6364

The text continues here.65

6. Discussion66

Authors should discuss the results and how they can be interpreted from the perspective of previous studies and of the working hypotheses. The findings and their implications should be discussed in the broadest context possible. Future research directions may also be highlighted.67686970

7. Conclusions71

This section is not mandatory, but can be added to the manuscript if the discussion is unusually long or complex.7273

8. Patents74

This section is not mandatory, but may be added if there are patents resulting from the work reported in this manuscript.7576

Author Contributions: For research articles with several authors, a short paragraph specifying their individual contributions must be provided. The following statements should be used “Conceptualization, X.X. and Y.Y.; methodology, X.X.; software, X.X.; validation, X.X., Y.Y. and Z.Z.; formal analysis, X.X.; investigation, X.X.; resources, X.X.; data curation, X.X.; writing—original draft preparation, X.X.; writing—review and editing, X.X.; visualization, X.X.; supervision, X.X.; project administration, X.X.; funding acquisition, Y.Y. All authors have read and agreed to the published version of the manuscript.”, please turn to the [CRediT taxonomy](#) for the term explanation. Authorship must be limited to those who have contributed substantially to the work reported.7778798081828384

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Abbreviations

The following abbreviations are used in this manuscript:

MDPI	Multidisciplinary Digital Publishing Institute	
DOAJ	Directory of open access journals	
TLA	Three letter acronym	
LD	Linear dichroism	

Appendix A

Appendix A.1

The appendix is an optional section that can contain details and data supplemental to
the main text—for example, explanations of experimental details that would disrupt the
flow of the main text but nonetheless remain crucial to understanding and reproducing
the research shown; figures of replicates for experiments of which representative data are
shown in the main text can be added here if brief, or as Supplementary Data. Mathematical
proofs of results not central to the paper can be added as an appendix.

Table A1. This is a table caption.

Title 1	Title 2	Title 3
Entry 1	Data	Data
Entry 2	Data	Data

Appendix B

All appendix sections must be cited in the main text. In the appendices, Figures, Tables, etc. should be labeled, starting with “A”—e.g., Figure A1, Figure A2, etc.

References

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