

Title: Terms of Reference for Machine Learning Researcher - Coastal Resilience Project

I. Introduction

A. Project Overview

Project Title: "Using Artificial Intelligence (AI) to Improve Coastal Resilience in Data-sparse Locations: Caribbean Region Case Study"

The project aims to address the impacts of climate change on coastal areas, emphasizing the threat posed to communities and marine ecosystems by flood and storm surges. Leveraging Artificial Intelligence (AI) for climate resilience, the project will utilize data-driven insights to guide decision-making, particularly in data-sparse locations such as the Caribbean. The key objectives include identifying alternative data sources for decision-making, predicting climate resilience of coastal locations, and determining optimal techniques to sensitize and educate vulnerable communities. Stakeholder engagement is central to the project, with a focus on accessing and exploring datasets, and the study's findings will be disseminated directly to key stakeholders and the wider Caribbean region.

Funding Agency: Irish Aid: Our Shared Ocean Programme

Project Duration: 18 months

Key Project Collaborators: The University of the West Indies and University College Dublin, Ireland

B. Purpose of the Terms of Reference

1. To outline the responsibilities and expectations for the Machine Learning Researcher position within the project.
2. To provide a clear understanding of the qualifications and skills required for the successful candidate.

II. Position Details

A. Job Title: Machine Learning Researcher

B. Reporting Structure

The Machine Learning Researcher will report directly to Dr. Letetia Addison, Prof. Patrick Hosein and Dr. Deborah Villarroel-Lamb.

C. Duration of Contract

The contract will be for a period of 18 months, with the possibility of extension based on performance and available funding.

D. Expected Start Date

The successful candidate is expected to commence the Contract on 1st April 2024.

E. Location

The successful candidate will be expected to execute the Contract in-person at The University of the West Indies, St Augustine Campus, Trinidad and Tobago, or to specified and agreed remote/hybrid arrangements. Note that the successful candidate must be readily available to work in The Republic of Trinidad and Tobago.

III. Responsibilities

The successful candidate will be responsible for the development and implementation of machine learning models, engage in research and innovation and documentation and reporting. Specific tasks include:

A. Develop and implement machine learning models

1. Utilize machine learning techniques to analyze and interpret environmental data related to coastal resilience.
2. Collaborate with interdisciplinary teams to integrate AI solutions into coastal resilience strategies.
3. Lead efforts in data preprocessing, feature engineering, and model evaluation.

B. Research and Innovation

1. Stay abreast of the latest advancements in machine learning and AI relevant to the project.
2. Contribute innovative ideas and approaches to enhance the project's outcomes.

C. Documentation and Reporting

1. Document all methodologies, codes, and findings in a clear and organized manner.
2. Contribute to the preparation of reports, presentations, and scientific publications.

IV. Qualifications

Candidates are expected to have qualifications as outlined below.

A. Education

1. Minimum of a Master's degree in Computer Science, Data Science, Machine Learning, or a related field.

B. Skills and Experience

1. Proven experience in machine learning projects, where a focus on environmental or geospatial applications will be an asset.
2. Proficient in programming languages such as Python and experienced with relevant ML libraries (e.g., TensorFlow, PyTorch).
3. Strong background in data analysis, statistical modeling, and feature extraction.
4. Excellent problem-solving skills and the ability to work independently.
5. Previous experience in projects related to coastal resilience or environmental sustainability is an advantage.

V. Application Process

A. Submission Requirements

1. Cover letter detailing relevant experience and interest in the project.
2. Curriculum vitae (CV) highlighting educational and professional background.
3. Portfolio or examples of previous machine learning projects.

B. Deadline for Applications

1. Applications must be submitted by 4:00pm (AST) on March 11, 2024.

VI. Evaluation and Selection

A. Criteria

1. Applications will be evaluated based on qualifications, experience, and alignment with project objectives.
2. Shortlisted candidates may be invited for an interview and/or technical assessment.

VII. Remuneration

A. Salary and Benefits

1. The successful candidate will receive a competitive salary commensurate with qualifications and experience.
2. Other benefits, if applicable, will be communicated during the offer stage.

VIII. Contact Information

A. Inquiries and Application Submission

Any questions should be directed to the Project Lead, Dr. Letetia Addison via email: Letetia.Addison@sta.uwi.edu

IX. Equal Opportunity Employer Statement

The organization is an equal opportunity employer and encourages individuals of all backgrounds to apply.

X. Amendment and Termination

1. The terms of reference may be amended, in writing, by mutual agreement between the parties.
2. Either party may terminate the contract with one (1) month written notice.

XI. Confidentiality

The Machine Learning Researcher is expected to maintain the confidentiality of project-related information and data. By accepting this position, the Machine Learning Researcher agrees to abide by the terms outlined in this document.