University College Dublin
Ireland's Global University

Dr Soumyabrata DEV

Dr Soumyabrata DEV
Office A1.16
School of Computer Science
Belfield, Dublin 4, Ireland
soumyabrata.dev@ucd.ie
(+353) 1896 1797
`https://soumyabrata.dev/`

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I am delighted to write this letter in support of our application "MICSAT: Monitoring Ireland's Coastal areas through SATellite imagery using deep learning" to 2022 Environmental Protection Agency (EPA) Research Call, in my capacity as an Assistant Professor in the School of Computer Science and Institute Member, UCD Earth Institute at University College Dublin. I am the lead applicant for this proposal, and the proposal is fantastically supported by our co-applicants. Our MICSAT co-applicants include Geological Survey Ireland (GSI), Environmental Geoinformatics (EnvoGeo), and Trinity College Dublin (TCD).

My research interests include computer vision and machine learning, with particular emphasis on climate science and atmospheric monitoring. Particularly, we are using the EU Copernicus data to constantly monitor atmospheric events. We propose state-of-the-art neural networks that are custom-built for such bespoke applications – pollutant forecasting, renewable energy estimation from diverse sensors, and cloud coverage computation, amongst others. With the successful receipt of this EPA funding, our consortium will be the first team in Ireland to release the large-scale annotated satellite images for Ireland. Such annotated dataset and our proposed deep neural networks will assist researchers in monitoring climate change-induced coastal evolution along the Irish coast and other inland regions. This will subsequently encourage the citizens to shift to more sustainable lifestyles.

In addition to working on climate research in Ireland, this EPA funding will assist us to apply for competitive funding in Ireland and abroad. The curated data collected from the project will be freely available to all researchers working in the area of climate science and earth observations. This will assist our team to also reach out to diverse researchers from different universities, and collaboratively solving the global problem of climate change.

I am delighted to lead this project, and thank my team members for their fantastic support of this EPA application. As the lead applicant, I confirm that the information provided in this application is correct to the best of my knowledge, and that the proposed project has not been/is not the subject of grant aid from any other source. In case of any additional queries, feel free to reach out to me.

Sincerely,

Soumyabrata Dev

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