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Centre for Oceans, Rivers, Atmosphere and Land Sciences (CORAL)

Dr. M. D. Behera

Associate Professor

Dated. 29th November 2021

To Whom it May Concern

It is my pleasure to recommend **Sudhanshu Kumar** for admission to a Ph.D. program at your esteemed university. I have taught him a compulsory LAB course on Data Analysis and GIS Laboratory at the Centre for Oceans, Rivers, Atmosphere, and Land Sciences (CORAL), Indian Institute of Technology Kharagpur. The course comprised coding on the Google Earth Engine platform and the use of basic JavaScript along with handling large datasets. Sudhanshu distinguished himself by submitting exceptionally well-researched and interesting project assignments and presentations on Air quality improvement over different Indian states. I would rank him in the top 1% of students that I have taught in the past fifteen years in respect of his writing ability and research skills.

Overall, Sudhanshu is highly intelligent and has good analytical skills. His project on comparison of Air-quality in Indian states demonstrated his ability to detailed understanding of the various factors and processes that influence air pollution and to analyze the consequences of those processes for predicting future regional climate. He gave a particularly interesting discussion of the major causes of Air-pollution and showed both sensitivity and detachment when discussing its critical consequences. His overall intelligence is also reflected in his grades for the course, which was by far the best in the class. He has excellent communication skillset.

He demonstrated his oral articulateness in the presentations that were an integral part of the course followed by a discussion focused on correlation with other atmospheric variables. Sudhanshu was highly proficient in applying the course material in analyzing the problem situations. He always explained his views very concisely and gave supporting arguments that were persuasive. Sudhanshu also demonstrated good teamwork skills in group assignments.

Furthermore, Sudhanshu worked under my direct supervision on a research paper titled "COVID-19 slowdown induced improvement in air quality in India" and helped in the generation of plots/figures. He has written two sections of the paper and currently, the paper has been published in 'Geocarto International' journal with Sudhanshu as a co-author.

At a personal level, Sudhanshu is a well-disciplined, industrious student with a pleasant personality. He went well beyond the course requirements in the quantity and quality of his project, putting in a lot of extra research every week. Throughout the course, he demonstrated great perseverance and initiative. Not only was he interested in and motivated to learn the material, but he also put great work into assimilating it to his own experience and developing his ideas about each topic that we discussed.

Sudhanshu is unquestionably an exceptional candidate for graduate study in the Earth System Sciences field. His work in analyzing remote sensing data and computing them suggests that he would greatly benefit from the similar opportunities provided by a sustained period of graduate study. He has proven himself to have the perseverance, initiative, and intellectual creativity necessary to complete an advanced graduate degree. I would therefore highly recommend Sudhanshu Kumar. If his performance in my class is a good indication of how he would perform as a graduate student, he would be an extremely positive asset to your program.

I wish him all the best!

Yours sincerely,

(MD Behera)

29/11/2021