Clarkson

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Dr. Laura Grabowski
Associate Professor and Chair
Department of Computer Science
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Dear Prof. Grabowski,

It is with great enthusiasm I am writing this letter in strongest support of Dr. Supraja Gurajala for tenure and promotion to the rank of Associate Professor at the Computer Science Department, SUNY Potsdam. I am an Associate Professor of Biology at Clarkson University and have been working with Supraja on multiple collaborative projects for more than three years.

It was in August 2018, when we were planning to organize a mini-conference on data science at Clarkson, we reached out to Supraja to give an invited talk there and she happily consented to it. This was the beginning of my first academic exchange with her. Her presentation, *"Can we develop reliable spatio-temporal event models with social media data?"* not only garnered positive feedback from conference attendees, but also marked the beginning of a very fruitful multidisciplinary collaboration.

Soon after the min-conference, we realized that we could take advantage of Supraja's expertise and experience in conducting data-driven research for a multidisciplinary project that we were initiating on the analysis of air quality data from low-cost sensors. This research team consisted of Dr. Suresh Dhaniyala from the Department of Mechanical Engineering at Clarkson University, Dr. Sumona Mondal from the Department of Mathematics at Clarkson University, and me; Supraja's addition to the team helped to expand the breadth of our expertise. Specifically, Supraja helped to kick-start our project assisting students with downloading the data from online repositories and writing python codes for analysis. Her expertise in database management was also very useful to curate a large amount of data in a database in our newly installed server so that they could be accessed easily for analysis. While the progress at the initial phase of the project was slower as the focus was on building the necessary expertise, it received momentum over the last two years and made some significant advancements in the field of analyzing low-cost sensor-derived air quality data. Specifically, a new spectral analysis-based approach was developed to understand how the measurements from low-cost sensors differ from the gold standard measurement by Environmental Protection Agency (EPA). Another work conducted on low-cost sensor correction models evaluated how far from the senor

location a reliable prediction of air quality can be made, and how the prediction accuracy could be improved by incorporating multiple low-cost sensors in the correction model. These research lead to the dissertation work of two graduate students, and Supraja is serving on the graduate committee of both of them. The work has led to two manuscripts, one of which is titled *"Understanding the source components captured by the Purple Air Network"* (doi: 10.26434/chemrxiv-2023-7wtxs) and is available through the ChemRxiv preprint server. Both manuscripts are expected to be submitted within a few weeks. When the COVID-19 pandemic impacted the world in early 2020, the research team also explored how the epidemiology of the disease (infection and fatality) could potentially be influenced by air quality and other demographic factors. This work led to a manuscript, which was published in the *Science of the Total Environment*. Additionally, the graduate students presented their work at multiple national and international conferences including Air Sensor International Conference (ASIC) at UC Devis, American Association for Aerosol Research (AAAR), and Probability and Statistics Day at UMBC. She also played an instrumental role as an instructor in the "Clarkson – SRIHR-ICMR Indo-US Training Workshop on Low-Cost Air Quality Sensors and Related Data Analytics" workshop organized at Clarkson University in August 2019, where she taught Python-based techniques for air quality analysis.

Supraja has made an impressive contribution to teaching during her tenure at SUNY Potsdam. She developed multiple new courses, including Introduction to *Cryptography, Machine Learning, Database Systems, Data Analysis and Visualization*, the last three of which would further make the students eligible for a Data Analysis concentration in their Computer Science BS degree. Although I am not an expert in this field, I believe these courses are extremely timely and will provide the students with a clear edge in the job market.

In summary, during her years at SUNY Potsdam, Supraja has demonstrated a strong potential for success in both research and teaching. I believe such a combination of qualities will be a valuable asset to the Department and the University. I will express my unequivocal support for her tenure and promotion to the rank of Associate Professor.

Sincerely yours,

Shantanu Sur