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January 15, 2023

SUNY Potsdam Reappointment Committees

I write in support of the continuing appointment of Dr. Supraja Gurajala in the Computer Science Department. I have had the pleasure of auditing her first offering of CIS 475 Introduction to Cryptography in Spring 2018; I attended the course because Dr. Gurajala has more recent experience with public-key crypto systems than I. I also audited her first offering of CIS 431 Machine Learning course, Spring 2020; this is her area of research expertise and I wanted to learn about the field of machine learning. I have been able to observe her teaching in two upper-division courses for more than a semester.

Dr. Gurajala is a successful teacher of complex topics because of her deep understanding of the topics, her enthusiasm in the classroom, and her careful attention to detail. She is also very good at adjusting the pace and method of presentation to make sure her class is learning the material.

In Cryptography the quality of the work on the board translated directly into the quality of our notes and we all benefited from Dr. Gurajala's preparation. This is particularly important in that she worked complex examples of enciphering and deciphering in various cryptographic systems; she worked from her own complete notes and the class followed along without getting lost.

The one downside of no textbook was that students had to take notes at the speed of light. Dr. Gurajala's subsequent offering of CIS 475 in Spring 2019 is presenting a slightly narrower collection of crypto systems at a slightly more sedate speed. Dr. Gurajala's adjustment of course content to better reach our students shows one of her many strengths as a teacher.

The implementation assignments, where students were to write computer programs using the mathematics taught in the classroom, were presented to the class in encrypted form. The students were set the puzzle of deciphering the assignment before they could begin the actual programming task. Some students were frustrated at first but Dr. Gurajala offered enough hints and assistance to get them past this. The assignments themselves were important for understanding the systems presented in the class.

Machine Learning is a 400-level course in Dr. Gurjala's area of specialization. I remain impressed by Dr. Gurajala's dissertation because it reported negative as well as positive

results. Her appreciation for determining where machine learning techniques work and where they don't informs the material in the course.

The design of the course, ranging across the breadth of machine learning techniques while drilling down to the exact underlying mathematics, reflects the width and depth of her knowledge in the field. Her research experience is reflected in the many real-world examples she brings into the classroom for each technique.

Dr. Gurajala's abiding interest in big data and machine learning is obvious both in *how* she teaches as well as *what* she teaches. The course is covering a very broad collection of very current work and she assigned no textbook. Instead she works examples on the board every single class. The first week of class was rough for some students because Dr. Gurajala wanted to get to the "good stuff" so she went a little bit fast for many. Noting this, and wanting to make sure that everyone could, eventually, come along to the good stuff, Dr. Gurajala rewrote her lectures beginning in the second week. The level of mathematics is still high and the presentation rigorous but the students are obviously following along much better than before. Dr. Gurajala's ability and willingness to shift gears when necessary reflects her ability as a teacher.

Adjusting the target level of the lectures required reworking of Dr. Gurajala's extensive notes. These notes and the use of example code and example images that she prepares before class show just how much effort she puts into preparing for class. The complexity of models such as multiple regression means that knowing the answer ahead of time is very necessary to teach the material; Dr. Gurajala is always ready with carefully solved examples.

Dr. Supraja Gurajala teaches a fast-paced, thorough introduction to Machine Learning. Students are challenged and well-supported in her class. Her complete understanding of the material permits her to tune her presentation to match the students in the course; her breadth of experience permits her to bring real-world examples into an introductory course. This course is a very strong addition to our curriculum and Dr. Gurajala is a great person to teach it. I very much look forward to working with her for many years to come.

Sincerely,

Brian C. Ladd
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