Nathalie Uwamahoro

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Outstanding TA Award selection committee

The Graduate School

304 Lyman Hall

Syracuse, NY 13210

February 22, 2025

Subject: Application for Outstanding TA Award

Dear Outstanding TA Award Selection Committee,

I am delighted to submit my teaching portfolio for the outstanding Teaching Assistant Award. Briefly, I am a third year PhD candidate in the Electrical and Computer Engineering (ECE, I am glad to be among nominated candidates for this award representing Electrical Engineering and Computer Science (EECS). I am an enthusiastic and resilient Africa woman from Rwanda andown a Master degree in ECE from Carnegie Mellon University. Up to date, I have completed all technical and required course and passed all my PhD qualifiers, I am a member of Smart Grid research lab mentored by Dr. Sara Eftekharnejad since fall semester 2022. Regarding teaching experience, I have been a TA for mandatory courses for undergraduate computer science and engineering students since 2023 and I have contributed to the success of the courses since most students are listed in the dean’s list 2025, and graduate school have awarded me teaching mento twice to train new teaching assistants during summer 2024 and 2025. I have ben also selected for Teaching Mentor selection committee 2025.

In detail, I have been TA for large and mandatory classes in the computer science and engineering, and all these classes have more than 120 students during fall semesters, these are CIS 151 Fall 2023 with Dr. Nadeem Ghani, CIS151 Spring 2024 with Dr. Reza Zafarani, CIS351 Fall 2024 with Dr. Rahman Farzana and Dr. Gabriel Silv de Oliveira, and CIS 351 Spring 2025 with Dr. Gabriel Silv de Oliveira. In addition to delivering technical programming and data structures to students, I encourage collaboration with each other with academic integrity, I also encourage students to attend TAs and Instructors ‘office hours. Before the exam, I always check in with many students during the last lab to make sure they are prepared for the exam. My teaching combine both technical and social skills, I make sure students in the course are gaining technical skills required to be a great programmers but also pay attention to detail, for example when I am grading students’ homework, I give detail of what missing in case marks are deducted, I will go in detail in my teaching philosophy, but I am enthusiastic with my teaching work and my instructors testified it.

Regarding my academic, my doctoral research focuses on power system stability and reliability. I combine traditional electrical engineering techniques with advanced machine learning methods. For example, I am developing an innovative flexibility metric for power grids that face uncertainties from renewable energy sources of different penetration levels. In this project, I conduct a probabilistic optimal power flow to identify critical decision variables for assessing grid flexibility, a method that effectively addresses the challenges posed uncertainties from high levels of renewable integration. This work is currently in progress and is slated for publication in the near future. Additionally, my research on comparing data-driven methods for predicting cascading failures in power grids earned the First Place Graduate Research Paper Award at the 55th North American Power Symposium (NAPS 2023). I utilize a range of tools—including the Power World simulator, DSA tools (such as PSAT, and VSAT), and the PandaPower Python library—to seamlessly integrate classic theories with modern technological advances.

My passion for teaching, coupled with support from experienced faculty at Syracuse University and Carnegie Mellon University, where I completed my master's studies, has shaped my teaching philosophy. My excellence in teaching has been recognized by the graduate school since I have a Teaching Mentor for summer 2024 and summer 2025 for new teaching assistants at Syracuse University and I believe I am a potential fit for this award.

The process of preparing this portfolio has equipped me for future professional endeavors and allowed me to reflect on my teaching style. I am eager to be among OTA award winners and keep contributing as a Teaching Mentor, participating in the 2025 Teaching Assistant Orientation Program. I appreciate your time, and consideration

Sincerely,

Nathalie Uwamahoro