

Application Summary

Competition Details

Competition Title:	2020 CTL/BP Junior Faculty Teaching Excellence Award
Category:	Institutional Awards - CTL
Award Cycle:	2020
Submission Deadline:	03/02/2020 at 11:59 PM

Application Information

Submitted By:	Hayriye Ayhan
Application ID:	4340
Application Title:	Siva Theja Maguluri
Date Submitted:	03/02/2020 at 1:05 PM

Personal Details

Applicant First Name:	Hayriye
Applicant Last Name:	Ayhan
Email Address:	hs41@gatech.edu
Phone Number:	(404) 894-2308

Primary School or Department

Industrial and Systems Engineering

Primary Appointment Title:	Professor
-----------------------------------	-----------

Application Details

Proposal Title

Siva Theja Maguluri

March 1, 2020

Dear CTL/BP Junior Faculty Teaching Excellence Award Committee,

It is my pleasure to nominate Professor Siva Theja Maguluri for the CTL/BP Junior Faculty Teaching Excellence Award. Dr. Maguluri is one of the most energetic and enthusiastic junior faculty in ISyE. His research is at the intersection of optimization and applied probability, with a focus on resource allocation problems and Reinforcement Learning. His most notable research achievements to date include resolving a long-standing open problem that was central to the area of Stochastic Networks and receiving the 'Best Publication in Applied Probability Award' that is awarded biennially by the Applied Probability Society of the Institute for Operations Research and the Management Sciences (INFORMS), his main professional society.

Dr. Maguluri's passion for research is only matched by his passion for teaching. Since he joined ISyE in 2017 he has taught four different courses, including required undergraduate courses, first year Ph.D. courses, and special topics course on advanced topics. He co-developed a bridge course meant for incoming Ph.D. students entitled 'Mathematics of Operations Research,' and also developed a new set of lecture notes for another fundamental first year Ph.D. course on Stochastic Processes. He uses innovative teaching methods in his class, such as 'pop-quizzes' to keep the students engaged and active, card tricks and paradoxes to teach subtle ideas in probability, and projects based on running a simulated manufacturing plant. The survey comments from students which are enclosed in this package highlight his energy and enthusiasm in the classroom, his ability to clearly explain complex material, and his respect and concern for students. The success of his teaching methods is evident from a 'Thank a teacher' note that he received as well as his CIOS scores which are usually above 4.5. He also received a score of 4.9 in multiple courses, including large undergraduate classes with a large degree of mathematical content which are considered notoriously difficult for the students as well as difficult to teach. Finally, Dr. Maguluri has been active in outreach activities for high school students and has developed an entertaining show based on magic card tricks to increase these students' interest in and excitement for the very important topic of mathematics.

In addition to his stellar classroom teaching, Dr. Maguluri takes active role in improving the overall learning experience in ISyE, both at the undergraduate and graduate levels. He has been mentoring several undergraduate students on research projects, some of whom are students from underrepresented groups and participate in the Summer Undergraduate Research in Engineering/Sciences (SURE) program. One of his former mentees won the 'CoE Outstanding Undergraduate Research Award' and is currently pursuing a Ph.D. degree at the University of Chicago. At the graduate level, Dr. Maguluri is serving on the Operations Research (OR) coordination committee and is working on redesigning the Ph.D. comprehensive exam structure. He also designed a program to mentor and prepare Ph.D. students for a future career as a faculty member. As part of this program, he developed and is coordinating a one-credit course titled, 'Preparing for a Successful Academic Career' that is intended to prepare and support students navigating the academic job market.

Dr. Maguluri is also an excellent doctoral advisor and strives for a holistic training of his Ph.D. students along the three dimensions of research, teaching and service. His students have not only been making good progress in research but have also excelled as Graduate Teaching Assistants and are participating in

Atlanta, GA 30332-0205 U.S.A.
WEB SITE: <http://www.isye.gatech.edu>

Phone: 404-894-2300
Fax: 404-894-2301

the Stewart Teaching Fellows program that is focused on providing Ph.D. students with training to be successful teachers. These students are also serving in leadership roles in student activities in ISyE as well as the research community.

In summary, Dr. Maguluri is passionate about all aspects of teaching including classroom teaching, curriculum development, improving our programs, outreach activities, and individual student mentorship. I am delighted to read the letters of support from the students as well as the CIOS comments enclosed in this nomination package. These comments are a strong evidence that Dr. Maguluri would be an excellent and highly deserving recipient of the CTL/BP Junior Faculty Teaching Excellence Award.

Sincerely,

A handwritten signature in black ink that reads "Edwin Romeijn". The signature is written in a cursive style and is underlined with a single horizontal line.

H. Edwin Romeijn
H. Milton and Carolyn J. Stewart School Chair and Professor

As a student, I did not think that I will one day be a professor, and will be teaching. However, I have always been passionate about learning, and looking back, I see that the *quest for knowledge* was the primary factor that determined the direction of my life. As an undergrad and a graduate student, I thought that the best way to learn is to take classes, and so I took as many classes as I could, much exceeding the requirements, and also earning additional degrees. Eventually, I developed interest in research when I realized that research is all about learning too, albeit of a different kind, where one focuses more deeply on one topic and learns more about it than pretty much any one else in the world. I never taught before I started as a faculty at Georgia Tech. But I fell in love with teaching the very first semester of teaching, when I realized that the person that learns the most in a classroom is the instructor. Teaching, for me, is an opportunity to share this joy of learning with others, and this reflects in the enthusiasm and energy I have in my classes. Students comments about my passion and enthusiasm for teaching can be seen in Section 5.1.

1 Teaching Philosophy:

Teaching and research are considered to be two important aspects of being a professor. However, for me, both these activities are just different manifestations of the same underlying passion for learning, and are at two ends of a spectrum. Getting to explore the whole spectrum between teaching and research is, for me, one of the best parts about being a professor. My approach to solve a complex research problem is to first focus on the simplest nontrivial example that captures the essence of the problem. This enables one to focus on the crux of the problem and the solution thus obtained can be later generalized. This idea is pithily captured in the saying, 'Everything should be made as simple as possible, but not simpler.' I have successfully used this way of problem solving in resolving a decade-long conjecture in the area of Stochastic Networks.

My teaching philosophy is also based on a similar paradigm of first presenting a **simple illustrative example**. For instance, the motivation behind several weeks worth of lectures in one of my courses, can be succinctly captured in three very simple examples. I use these examples as a story line during that part of the course. Teaching forces me to have simple and clear understanding of fundamental concepts in order to present them. My first step in solving a research problem is by asking, 'How would I explain this problem to a student in a class?' This leads to a simpler formulation with a clearer formulation that yields to a solution. I believe that the clarity of thought that teaching forces one to have, is essential for process of discovery. Case in point is a research problem that I was thinking about, which I converted into a homework problem, by breaking into simpler parts focusing on the essential components. This homework problem was later expanded into a full-fledged conference paper, that we recently submitted. This teaching paradigm is greatly appreciated as evident from the comments from students, presented in Section 5.2. I bridge the gap between research and teaching at both undergraduate and graduate level through various activities, which are described in appropriate sections below.

2 Classroom Teaching

Most of the classes I teach are math heavy, and so I believe that old-fashioned white board based lectures are most effective, with occasional use of slides to present figures, plots, computer simulations etc. I invest about five hours of preparation time for each lecture, developing a storyline to present the material, starting from a simple example and then building up from it. I share these hand-written lecture notes with students, which is greatly appreciated by them. Some students make their personal notes on top of a copy of my hand-written notes.

I keep my classes highly **interactive**. I start each lecture with a quick recap of the previous lecture, which helps the students zone into the lecture. Many a time, this recap is done in the form of a short question and answer session, which serves as an ice breaker. I strongly encourage questions, and respect questions of any kind. A typical lecture is usually peppered with quite a few questions from students, which helps me keep the lectures at a right pace.

I work on constantly improving my teaching style, picking up best practices from other faculty in ISyE. Taking part in the **Class of 1969 teaching fellows** program was greatly helpful in comparing with notes with other junior faculty. I also evaluate the learning experience of students in every course through midsemester surveys and tailor the rest of the course accordingly. In addition, Dr. Rebecca Pope from CTL attended one of my classes and collected feedback from the students, which I used to tailor the rest of the course.

Some fundamental concepts in probability can be used to construct puzzles, paradoxes, games and even **magic tricks**, which I use in my classes to illustrate various concepts. For instance, the famous central limit theorem is very nicely illustrated using a toy called, 'Galton Board', which I have used in almost all the classes that I taught so far. I have used multiple mathematical card tricks (no sleight of hand required) in classes as a memorable and entertaining way to teach probability. This is an effective teaching tool all the way from high school students to Ph.D. students. Supported by the class of 1969 teaching fellowship, I attended a conference dedicated to recreation mathematics, called 'Gathering for Gardner', where I learned more tricks. Comments from students about my classroom teaching style are presented in Section 5.3

2.1 Undergraduate

Over years, I have taught multiple sections of ISyE 3232, Stochastic Service and Manufacturing Systems.' This course involves a simulation game, where students work in teams of three managing a manufacturing plant, and compete with other teams to maximize profit. This gives an opportunity for students to translate the material learnt in the class to a real world setting.

I believe that a traditional lecture style class is best suited for such a course involving mathematical content. However, mathematics, like swimming can be learnt only by practice, and not by watching some one else do it or by reading a book. In order to enable students learn in class by practice, I have been successfully experimenting with a semi-flipped model involving **pop quizzes**. In almost every class, I assign a pop-quiz, where students work in teams of two to solve an exercise problem. Typically, these problems involve using a concept that they just learnt, and have not yet seen an example. Thus, they brain storm with a friend, make mistakes, and learn from each other in the process. This also gives them a chance to digest the material that they learnt, and also keeps them active and engaged in the lecture. One or two teams that finish the solution early, write it on the white board, and I summarize it before moving forward. These pop quizzes are not graded for correctness, but used only for attendance, which removes a lot of stress associated with quizzes. CIOS responses presented in Section 5.4 show that this approach is a roaring success.

A major focus of this class is on developing tools from Stochastic processes that can be used to model engineering systems. However, it is very hard to obtain closed-form expressions in all but the simplest systems. A very useful approach in practice is to code up the mathematical model on a computer, and use simulations to quickly obtain an answer. Writing such code has now become very easy with simple program languages such as Python, and several packages it supports. I have been creating interactive simulations in Python based Jupyter notebooks, in order for students to develop intuition about various mathematical models that are hard to analytically study. I usually release the code ahead of time, so that students can play with the code during in-class demonstrations. In order to enable students to develop programming as a problem solving

paradigm, I have also been assigning exercises, where they should modify the code to solve a problem. While the in-class demonstrations are well received, there has been mixed feedback about the coding exercises, and am now fine tuning the exercises for the next iteration of the course.

In order to reduce stress associated to grading, and provide an opportunity for students to improve during the course of a semester, I also use a flexible grading system. The weights associated with each of the exams are not fixed, and can be from one of four different options. The set of weights that maximize the final score are used for each student. If a student under-performed in Midterm I or II and excels in the final, this system assigns a lower weight to the midterm, thus giving an opportunity for the student to make up for the poorer score earlier in the semester.

Overall, these approaches are well received by students, resulting in a CIOS score of **4.90** across two sections in the latest iteration of this course.

2.2 Ph.D.

There are three stages of learning mathematical subjects. The first stage is to intuitively understand concepts without much rigorous notions, which is the style at in typical undergraduate level courses. The second stage is when each and every step is done in a rigorous and precise manner. At this stage, students start thinking about the concepts in terms of the rigorous notions. This is the style of teaching in some advanced undergraduate courses and graduate courses. The third stage is when one is comfortable with the rigor, outgrows it, and again starts to think intuitively, but is capable of presenting a formal argument whenever necessary. Students usually get to this stage in later stages of their Ph.D.

While **rigor** is essential for good graduate level mathematical training, I believe that having good **intuition** is even more important. This is essential for students to grow into great researchers, and for them to develop their creativity. Usually, Ph.D. level courses aim to be at the second level. As a grad student, I took more than half a dozen courses related to probability theory, and learnt the formalism in terms of measure theory, and was comfortable writing proofs in this language. However, it was never clear to me at that time, as to why we need this formalism. I design Ph.D. courses so that they convey the intuition while also being rigorous. I do this using illustrative examples, mathematical card tricks, and sometimes simply by explaining why we proved a theorem, and what it means.

I disseminate some of my own research results in my graduate as well as undergraduate classes. The clarity of thought that I gained by teaching some concepts in a class has greatly helped me in research. When I learn a new research result, I try to give a talk or a lecture on it, firstly which helps me better understand the result.

I have been regularly teaching Stochastic Processes - I, a first year Ph.D. course in ISyE, meant to prepare students for research. I **developed** the material for this course from scratch. These **hand-written notes** are currently being used for a similar course in **Cornell University**. I am currently working on bringing out a free e-book version of these notes. To prove one of the main theorems in this course, the notion of probabilistic coupling is exploited, which can be confusing to students. I illustrate the idea of coupling, and the main idea behind the proof through a beautiful card trick called **Kruskal's card trick**. This course is well received as reflected in the CIOS score of 4.90, the first time this course was offered.

Incoming Ph.D. students in ISyE come from very diverse mathematical backgrounds, with some majoring in math in undergrad, while some that may have not seen a math course in years. Students of the latter type usually struggle going through the Ph.D. courses due to their lack of rigorous mathematical training. In order to help them transition into ISyE, I **co-developed a course**

called 'Mathematics of Operations Research.' While this course has existed in some form in the past, there was a break in its offering. Jointly with Prof. Singh, we went back to the drawing board and completely redesigned this course in order to make sure that it indeed serves its purpose as a bridge course for some incoming Ph.D. students. This course is now designed primarily to develop proof writing skills and mathematical rigor, while also giving an overview of senior level Real Analysis and Linear Algebra. The **notes and problem sets** that we developed for this course are currently being used in later iterations of this course. Section 5.5 presents CIOS comments from students about lecture notes and homework problems.

Both these courses are meant for incoming Ph.D. students, and most OR Ph.D. students take the Stochastic Processes course in their first semester. Therefore, I ensure that these courses enable them to be better prepared for the next few years of grad school. I do this by bridging research and teaching and incorporate some potentially useful research tools and results in these courses. Moreover, I created several home work problems based on breaking down a research result into simple bite-sized chunks. These problem have several parts, each of which is not too hard. When all the parts are completed and put together, one obtains a fairly big result which is part of a paper or more advanced material. This is a way to develop independent problem solving capability, which is essential for success in grad school.

3 Beyond Classroom

In this section, I will present some of my teaching activities outside classroom at various levels.

3.1 Undergraduate

I take active part in working with undergrad students on research projects. Given that a major focus of my research is on theoretical advancements, it is especially challenging to work with undergrad students because of their lack of enough prerequisites. However, I worked with multiple students, from right after they finish ISyE 3232 with me. When I teach the course, I incorporate basic ideas of some research problems. Therefore, the students are well prepared to start a research project right after. I typically start with a project based on simulating a system to gain insights into its behaviour, and move forward from there. In addition, I have also mentored external undergrad students from under-represented minority groups that spend a summer at Georgia Tech, as part of the SURE (Summer **Undergraduate Research** in Engineering) program.

I was especially successful working with one undergrad student, who was persistent and worked with me over a period of two years, and moved well-beyond the simulation phase. She developed interest in research, prepared herself by taking several advanced courses from Math and ISyE, and eventually proved new theoretical results. Some of this work was published in peer reviewed conference proceedings, and we are currently working on completing another journal paper. For her research contributions, she received the **PURA award** as well as the '**College of Engineering outstanding undergraduate researcher award**'. She is now pursuing her doctoral studies in Applied probability, at the Booth school of business in University of Chicago.

Working with undergraduate students, I realized that they are not aware of research as a career path. This also reflects in the fact that less than 1% of graduating ISyE undergrads go for Ph.D. With the goal of exposing students to various career possibilities including research, I organized a **panel** discussion on **career trajectories** during the last day of classes. This panel consisted of a invited speakers from very diverse backgrounds and industries, from industry and academia, some young and some veterans, some that have been working since their college, some that got a masters, and some that did a Ph.D. The panel also had a good representation of ISyE alumni, and

also had the director of masters programs in ISyE. In spite of it being very close to the finals, the panel was well attended, and the students has very engaging conversations.

3.2 Ph.D. students

In order to encourage learning outside of classroom, I run a weekly reading group on reinforcement learning. It is very popular, with about fifteen students attending every week. It primarily consists of students reading papers, and presenting them. The tables are turned here, and now I learn from the students, and the reading group was especially useful for me to quick pick up a new area that I was trying to get into.

Since I teach a first year Ph.D. course, I have been actively involved in the comprehensive exam process in ISyE. I believe that the comprehensive exam should have greater focus on research, as opposed to a written exam based on courses. For instance, it can be an oral exam based on a research presentation, or a written research report. In order to make such a transition happen, I am serving on the **OR coordination committee**, and the committee is currently working on bringing out a new format for the **comprehensive exam**.

While ISyE graduates very strong Ph.D.'s, our academic job placement is not commensurate to our potential. I believe that a reason for this is lack of mentorship for our students about navigating the academic job market, and being successful in an academic career. Therefore, over years, I have been informally mentoring students in the academic job market, giving them feedback on their job talks, etc. This semester, I formalized this mentorship program into a one-credit practicum course on '**Preparing for a Successful Academic Career**'. This course is inspired by a similar course that was started in ECE, and is meant for students that will be apply to academic jobs the following falls semester. This is a practicum course, where the students work on their application package including CV, Research and Teaching statements, and prepare themselves for the job interview process and beyond. The course will also include mock presentations, developing a research vision, thinking about funding, practicing grant writing, thinking about running a research group etc. Even though I run the course, several faculty from ISyE make presentations in the class, give feedback to students about their write ups, so that students get to see multiple different points of view, and also get feedback from experts in each area.

4 Ph.D. student mentorship

One of the most fulfilling aspects of an academic career for me is the personal training of Ph.D. students. I believe in a holistic training of graduate students so that they can be future leaders in the community. In order to development independent problem solving ability, I start working with a student on a relatively simpler problem, gradually moving on to more challenging ones.

Developing a broader research vision beyond one's own narrow problem is essential. I run weekly group meetings where one student makes a presentation on a predecided topic. This gives an opportunity for my research group to learn from one other about the broad area. The group meetings also help them develop and polish their communication skills, which is useful not only to disseminate their research results, but also to make them effective future teachers. These meetings are also a great way for the group members to know each other and to develop a friendly environment. More senior members of my research group now help the newer members settle into grad school, and mentor them as they progress through the program.

My students are also interested in teaching. Three of them have gone through CTL's teaching course, and are interested in teaching a course before they graduate. Their passion and aptitude for teaching is illustrated by the fact that one of my students that served as a TA for one of my

courses received a CIOS score of 4.98. Two of my students are also involved in mentoring undergraduate students on research projects.

I also encourage my students to develop their leadership skills. They do this by running the student seminar series in ISyE, serving as webchairs for professional societies, co-organizing sessions at conferences, meeting with visiting faculty and assisting in organizing their visit, etc. In order to help them network, I support not only their participation in conferences, but also visits to other universities to give seminars. These activities have helped them not only promote and disseminate their research, but also to be recognized in the community, which is reflected in the fact that they are now invited to present at conferences, and also have received fellowships and travel awards.

It is very satisfying to see the students grow over the duration of their Ph.D. program to become good problem solvers and independent thinkers, develop a research vision and taste for good problems, become effective communicators, teachers and mentors.

4.1 Outreach activities

I strongly believe in sharing the excitement and opportunities in STEM careers with K-12 students, and so have been actively engaged in outreach activities with high school students since his days as a post-doc at IBM Research. More recently, I designed and performed a session on **'Fun with Math: Puzzles, Card tricks and More'** at **'Mission Possible,'** a summer camp for high school in ISyE. In this session, I performed several mathematical card tricks and then lead the students in a step-by-step manner so that they can figure out the secret behind the trick on their own. The students experienced that math can be fun, and in the process learnt the basics of various concepts such as permutations, modulo arithmetic, pigeon-hole principle, information theory, etc. I am also scheduled to take part in **'Day Camp with Industrial Engineers'** event meant for high school students in April.

5 CIOS Scores and selected comments

Table 1 presents the interpolated Median scores for a few questions on CIOS surveys for all the courses that I taught so far. For Fall 2017 and 2018, ISyE 6761 and MATH 6761 are cross-listed versions of the same class. In this section, I present some **selected** comments from students' responses in CIOS survey that touch upon various parts of my teaching philosophy and methods presented in the previous sections. The italicized text is verbatim from CIOS surveys.

5.1 Passion for Teaching

The word *Enthusiasm* appeared over 50 times among the CIOS comments of all the courses I taught so far.

- Instructor greatest strength: *He is fun, he enjoys teaching class, so it makes you enjoy it. He really thinks what to teach and how to teach it, making him a good professor. Hes not just repeating a script semester by semester, you can see he wants to improve and that is helpful for learning.* ISyE 6761, Fall 2019
- Instructor greatest strength: *I always felt the professor was very enthusiastic about the course and the material. This made it very easy to ask questions during class. He also made the class interactive by calling on people to answer questions and to write on the board. His enthusiasm always made him come off as approachable and I never felt like I was bothering him during office hours.* ISyE 3232, Fall 2017

Course	Term	Class Size	No. of Resp.	Overall Effectiveness	Respect	Clarity	Enthusiasm
ISyE 6761	Fall 2019	38	34	4.8	4.8	4.7	5.0
ISyE 3232B	Fall 2019	53	47	4.9	4.8	4.8	4.8
ISyE 3232C	Fall 2019	48	41	4.9	4.9	4.9	5.0
ISyE 6761	Fall 2018	41	36	4.6	4.8	4.7	5.0
MATH 6761	Fall 2018	11	10	4.7	4.8	4.7	4.9
ISyE 8813 OR	Fall 2018	34	30	4.8	4.8	4.8	5.0
ISyE 8803 MAG	Fall 2018	6	6	4.5	4.9	4.5	5.0
ISyE 6761	Fall 2017	33	31	4.8	4.9	4.7	5.0
MATH 6761	Fall 2017	8	7	4.9	4.9	4.9	4.9
ISyE 3232A	Spring 2017	61	53	4.7	4.7	4.5	4.8
ISyE 3232C	Spring 2017	57	51	4.3	4.6	4.5	4.7

Table 1: CIOS Scores of all courses that I taught so far

- Instructor greatest strength: *Siva's enthusiasm keeps me awake in the late afternoon and increases my own enthusiasm in stochs!* ISyE 6761, Fall 2019
- Instructor greatest strength: *He is extremely excited to be there to teach students every days and really enjoys it making the students more excited as well* ISyE 3232, Fall 2017
- Instructor greatest strength: *His infectious energy and remarkable knowledge of the material* ISyE 3232, Fall 2019

5.2 Teaching Philosophy

Comments that reflect my teaching philosophy presented in Section 1.

- Instructor greatest strength: *He would build up his examples so that we would be able to understand the concepts. i.e. he started with the most basic example and then finished with the most complex example* ISyE 3232, Fall 2017
- Course best aspect: *The way professor explained problems and took a deep-dive into the proofs. Interesting aspect was how to understand the problem from 20,000 feet view, besides looking at mathematical proofs.* ISyE 8803 MAG, Fall 2018
- Course best aspect: *I like Siva's enthusiasm. His presentation of complicated math proofs; both at detailed and abstract levels.* ISyE 8803 MAG, Fall 2018
- Course best aspect: *The way he used to explain things. His clarity was EXCEPTIONAL.* ISyE 8803 MAG, Fall 2018
- Instructor greatest strength: *Dr. Maguluri is extremely easy to understand and follow. He has a unique ability to explain new concepts clearly. He knew the material very well and was always happy to help you if you didn't quite understand a concept.* ISyE 3232, Fall 2019
- Instructor greatest strength: *He is a very easy to talk with and explains complex concepts in a way that they make sense.* ISyE 3232, Fall 2019

- Instructor greatest strength: *Technical knowledge. Dr. Maguluri is clearly an expert in this area and can communicate the concepts clearly with intuitive examples.* ISyE 3232, Fall 2019

5.3 Classroom teaching style

Comments that talk about my classroom teaching style presented in Section 2.

- *I appreciate the traditional lecture style. It was cool when Siva got volunteers to help demonstrate the coupling trick.* ISyE 6761, Fall 2019. Comment reg the Kruskal's card trick.
- *Choosing to lecture without a PowerPoint was very helpful. Engaging conversations and calculations instead regurgitating a textbook facilitated great learning.* ISyE 3232, Fall 2019
- Instructor greatest strength: *The interactive way of teaching and open discussion on questions was very good. Additionally, the real life application and examples of real analysis and probability theory were really helpful.* ISyE 8813 OR, Fall 2018.
- Instructor greatest strength: *The professor made the class a lot of fun and very interactive. I think he is the best professor that I've had in ISyE so far!* ISyE 3232, Fall 2017
- *Great teacher. He really loved the material and this shined through in the lectures which made it a fun class to attend. Good at making eye contact with the students and making sure people were engaged by asking questions very often through the class.* ISyE 3232, Fall 2017
- Instructor greatest strength: *Overall, one of the best instructors that I have had at Georgia Tech. His best strength was maybe his ability to understand whether the students in the class were understanding or not.* ISyE 3232, Fall 2017
- Instructor greatest strength: *Professor Siva is an absolutely amazing lecturer. He presented the material in a way that was very easy to follow along and understand. As well, at the beginning of each class he would summarize the previous class so that we would have background in the material. He encouraged class participation and showed us resources that implemented the knowledge we learned in the class. Overall, I would absolutely take Professor Siva again, because he did an amazing job of teaching me the material.* ISyE 3232, Fall 2017
- Instructor other comments: *His personality helps keep the class engaging. They were some explanations that really clicked for some of the topics and I liked seeing plenty of examples as well.* ISyE 8813 OR, Fall 2018.
- Course best aspect: *Sivas teaching was some of the most organized and enthusiastic instruction I have ever received in a university course.* ISyE 8813 OR, Fall 2018.
- Instructor greatest strength: *putting everything in context. making sure the students know why whatever we're learning matters* ISyE 6761, Fall 2019

5.4 Pop Quizzes

Comments from ISyE 3232 Fall 2019, when I used pop-quizzes as described in Section 2.1.

- Course best aspect: *The pop quizzes were extremely helpful. I liked it because they weren't real quizzes so there was no pressure to get it right but it was more just to enhance our learning experience. I think it is a nice break from lecture and is really helpful when we go over it. I wish all my classes did something similar!* ISyE 3232, Fall 2019

- Course best aspect: *The pop quizzes - they gave us time to slow down and work through the problems ourselves and at the speed we needed to comprehend the material* ISyE 3232, Fall 2019
- Course best aspect: *I liked doing the pop quizzes because it gave me something to do rather than sit and take notes.* ISyE 3232, Fall 2019
- *The pop quizzes were a good thing to have because they facilitated learning and they were a good check-up on if you know what is going on.* ISyE 3232, Fall 2019

5.5 Lecture Notes and Homeworks

These comments relate to the curriculum development as described in Section 2.2, including the lecture notes and homeworks.

- Instructor greatest strength: *Dr. Maguluri was extremely well prepared for the course. He developed excellent notes in advance of the lectures and was very capable of handling questions as they came up.* ISyE 6761, Fall 2017
- Course best aspect: *The contents of this course are well-organized and systematic. A lot of fundamental concepts and theorems are covered and demonstrated with easy-understood examples.* ISyE 6761, Fall 2017
- Instructor greatest strength: *Organized and excited! Such crystal clear notes.* ISyE 8813 OR, Fall 2018.
- *Dr. Maguluri organizes the contents of lectures very well. He is good at connecting different parts of knowledge together to help us to build a systematic perspective on the materials we studied.* ISyE 6761, Fall 2017
- *Siva is a great teacher, very nice, very clear, good pace, designed homeworks that made us learn even more than we did in the lecture. I am very grateful of his work.* ISyE 6761, Fall 2019
- Course best aspect: *The homework were very helpful in learning the material. Prof. Maguluri's lectures were very clear and informative and the online lecture notes were a great resource.* ISyE 6761, Fall 2019
- Course best aspect: *This helped me prepare for the PhD I want to pursue in the future. My mathematical background became stronger* ISyE 8813 OR, Fall 2018. As described in Sec 2.2, this was the motivation behind our design of this class, and this comment shows that this student has achieved this goal.

5.6 Other comments

- Instructor greatest strength: *SO FUN!! entertaining, loved the material, sooo smart and knew the material SOOO well. so so so so smart. loved attending class* ISyE 3232, Fall 2019
- *I really liked the friendly environment maintained by the instructor in the class. He was very approachable.* MATH 6761, Fall 2018
- Instructor greatest strength: *His greatest strengths are his humor and enthusiasm through the class. He always tries his best to keep the class participating and fun.* ISyE 3232, Fall 2019

- Course improvements: *I honestly do not know how it could be improved. Dr. M was an excellent professor and I hope I have the opportunity to take a course from him again. ISyE 3232, Fall 2017*
- Instructor greatest strength: *Bringing in a panel from industry during the final exam week so we can see how the topics apply in real life. Giving in-class pop-quizzes with immediate feedback so we could practice skills and material as we learned them ISyE 3232, Fall 2019*

5.7 Overall Teaching Effectiveness

- *I wish Dr. Maguluri teaches every major class I need to take in the future ISyE 3232, Fall 2017*
- Course best aspect: *Professor was the smartest professor I have had. He knew the subject he was teaching exceptionally well, but I feel like he knows every subject very well, so he should be allowed to teach any course anywhere anytime. ISyE 3232, Fall 2019*
- Instructor greatest strength: *Professor Maguluri is a great example of how i wish all teachers would be. He is kind, approachable, enthusiastic about the subject, seems to care about his students understanding, and has a great teaching style. Please keep doing pop quizzes for future classes you teach! They are very helpful and a break from just sitting there during lecture. ISyE 3232, Fall 2019*
- *Best Teacher I have had at Tech ISyE 3232, Fall 2019*
- Instructor other comments: *Just good. Only instructor i actually look forward to going to their class. ISyE 8813 OR, Fall 2018.*
- Instructor greatest strength: *One of the best professors I have had at GT. Very knowledgable of his subject matter and very enthusiastic about the course ISyE 3232, Fall 2019*
- *Quite simply, one of the best professors I've at Georgia Tech. Excellent teaching style and great enthusiasm about the course. Loved the jokes the professor would sometimes crack during lecture which never allowed the lecture to get too boring or monotonous. Would be extremely glad to take another course with him in the future! ISyE 3232, Fall 2017*
- Instructor greatest strength: *Excellent teacher. Went over what was important from previous lectures and builds off of that in lecture. Always makes sure that links between concepts are clearly outlined. Answered student's questions thoroughly and always made sure the class understood before proceeding. Really wanted the students to have a great learning experience and frequently asked for feedback on his performance. He is an excellent professor and I highly recommend taking his course. The learning environment he created was excellent and I hope to take other courses from him in the future. ISyE 3232, Fall 2019*

5.8 Thank a teacher note

The following was a 'Thank a teacher' note that I received for ISyE 3232 in Fall 2019.

Professor,

Thank you for a great semester. Your knowledge in the subject material and your ability to explain topics is unmatched in my experience at Georgia Tech. Hope you can continue teaching and inspiring students for a long time.

STUDENT RESPONSES TO A SURVEY

In Fall 2019, while Professor Maguluri was teaching ISyE 3232, undergraduate student coordinator Professor Chen Zhou observed Professor Maguluri's class and conducted a survey of the students. The students overwhelmingly found Dr. Maguluri's teaching style extremely effective and provided the following additional comments. Note that these are **all** the comments that students sent in response to the survey.

- Professor Maguluri genuinely cares for his students. He makes sure everyone understands the concept before he moves on and is very willing to stop and answer any questions. He frequently asked for feedback on his performance as a teacher so he can improve, which I genuinely appreciate because most professors don't go to such lengths to make sure the student has an effective learning environment. He makes lecture interesting and lets us know clearly what is important from previous lectures and clearly shows how every concept fits together. He is an excellent instructor and I would love for him to receive this award.
- Professor Maguluri is an excellent lecturer and does a really great job structuring his classes to teach us this content.
- In all my time as a student, I have never met a teacher better at answering questions. His remarkable knowledge and unmatched communication skills amaze me.
- I think he is the best teacher I have had at Georgia Tech. He is well-prepared, engaging, and explains clearly and energetically.
- He was very passionate and well-prepared in every single lecture that he teaches. Also, he was extremely caring to his students and he definitely communicates well with his students.
- Professor Maguluri is very detailed and thorough in all his lectures, and he makes sure to provide lots of examples throughout his lessons. He also encourages students to participate with the lesson by asking questions.
- Dr Maguluri's lectures are extremely organized, he is very clear when he explains new concepts. He keeps the class engaged by making pop quizzes, quizzes which, usually, students hate. However, the way Dr. Maguluri makes those quizzes makes students like them, because these quizzes help us apply the concept that the professor just taught in a collective and active way. Additionally, Dr. Maguluri values the feedback that we give him as students. He really listens to what we think about homeworks, and tests, and corrects his way of teaching according to what fits best our preferences. I really like the way Dr. Maguluri challenges us during exams: he's not a professor that just copies similar questions from practice exams to actual exams. Furthermore, he makes it very easy to link the problems that we study during class to real life issues, like traffic for example. Everytime I am in the queue for the security check point in the airport, I cannot stop thinking about Queueing Theory. This really has proven to me how much Dr. Maguluri has helped me really find passion in optimization problems.
- I think Professor Maguluri's teaching style is amazing. We have pop quizzes everyday but they are more just a check of participation and attendance. I really like this because it takes pressure away from a real quiz and instead is just an interactive way to test if we understand what is currently going on in lecture. At the end we go over it together and get a chance in real time to see if we understand the material and if not we can ask questions. Aside from his excellent teaching styles I think he also comes off as very kind, approachable, and knowledgeable about the subject. He is engaging and makes me feel like he genuinely cares about us understanding and being interested in the class and in ISYE in general. I never really write reviews for my professors but I feel like I must for him because he is a wonderful example of how a class should be taught, my only advice to him would be to keep doing what he's doing.
- I believe interest in the subject is mandatory for effective learning. Dr. Maguluri has structured his class so that I am always engaged and excited to learn in class, improving retention of material. He always is enthusiastic in class and engages the class with pop quizzes and student input, while teaching the class with a passion for teaching, all important aspects of an effective professor.
- Best teacher I have had.

- Great professor, very knowledgeable and approachable. Always knows the answer to any questions people ask.
- It's obvious that he is an expert on the subject matter that he is teaching. He not only cares about the course material, but you can tell that he really cares about his students, and he wants us to succeed. He is good balancing making the course challenging but also fair. His lecture notes are some of the best that I have ever had during my time at this school. He does things in class to make lectures engaging.
- He is the best teacher I have had at Georgia Tech. For a long time, I was discouraged by the material and my performance in industrial engineering. I thought about switching majors. This class has singlehandedly changed my mind. Professor Maguluri is very knowledgeable and always willing to help. He gets me excited about the material and explains in a way that I can understand. I am genuinely excited to go to his class every day. His class is challenging but doable. I have not had a better teacher at Georgia Tech.
- I did not like this class. I am a very committed student who maintains a lot of interest in my studies, but this is the first class that I have not been at all interested in. He teaches only what is in the textbook and requires memorization of all formulas from this class and previous classes which means I cannot focus on learning the material as much as focusing on memorizing formulas I will be able to look up if I ever need to actually use them.
- This was the first class I have taken at Georgia Tech where I was excited to see what the next thing he was going to write on the board was. Realizing that I had such an interest in the next step of the process or whatever subject was at hand throughout the semester made me realize that I was confident in choosing ISyE as my major and career. So, in turn, without Professor Maguluri, I would not be excited to progress into the ISyE curriculum nor have had such a semester where I have been happy to take my classes and look forward to learning.
- Professor Maguluri was extremely good at passing on his knowledge. Not only could he lecture in a way that made confusing topics seem simple, he also provided lots of activities and opportunities to learn more, which made me feel like he really cared about our success.
- He is very good at explaining difficult concepts. He always builds up from a simple concept to a more complicated topic.
- He tends to just lecture from the notes. The textbook does the same thing. I think his grading is too harsh and he fails to reward students for hard work. An example of this is having one homework assignment be about a 300 page book we had to read. Students were not fairly credited for all the effort put in to that reading. As far as what I have internalized, I will retain a fair amount. I'm hoping to take DTMC and CTMC from this.
- An incredibly engaging and effective communicator, Dr. Maguluri is an asset to the ISyE department at Georgia Tech. He consistently provides a review of the last lecture, identifies key topics and definitions, provides incredibly helpful homework assignments, returns work in a timely manner, elaborates on the applications of the material, and clearly explains new and unfamiliar concepts. I have been able to rely on Dr. Maguluri more than any of my other professors this year to provide an educational experience every single lecture. Additionally, he has gone above and beyond the expectations on several occasions. Most notably were Dr. Maguluri's efforts when he voluntarily asked for feedback on his teaching methods from the Center for Learning and Teaching, as well as his end-of-year ISyE career panel where he invited ISyE alumni to discuss their career paths. I believe Dr. Maguluri is truly deserving of this award.
- Understands what is most important for us to know and is able to effectively communicate this to our class.
- Professor Maguluri has been one of the best Industrial Engineering professors I have had the opportunity to learn from at Georgia Tech. His way of teaching is very engaging, informative and often stimulates interest outside of the classroom. I believe this institution would be more successful if more professors were like Professor Maguluri.
- Very clear and concise!

- He's very passionate about his work and it shows in his teaching
- Very knowledgeable about all the topics and lectures are organized and clear. He engages with students constantly and class participation is commonplace here. He is a very passionate professor and I really hope he gets this award!
- He is a great teacher and cares a lot about students. He works with us to make sure we are doing ok and he always has our back.
- Not very caring for students
- Professor Maguluri has been one of the most phenomenal professors I have had in my life, beyond even just at this school. The main thing that has been obvious to me during his class was his concerns for his student's learning and how effectively he communicated tough concepts during lecture. He clearly cared about every student, and would constantly make sure no one was being left behind. He used effective participation techniques that helped solidify his teaching, put on a special panel for his students to help us be prepared outside of the classroom, and consistently went above and beyond his teaching duties in a way that made my experience as a student so much more effective. To reiterate, he is one of the best professors I have ever had, and is absolutely deserving of recognition for his excellence in teaching.
- I dropped this class last semester because the topics were covered poorly. Professor Maguluri makes it much more possible to learn this extremely difficult subject matter. He is an effective teacher and probably one of the best I've had after 4 years of college.
- He always provides sufficient examples when explaining new concepts and encourages students to participate actively using pop quizzes. His homeworks are challenging but prepare students well for exams. He has a great sense of humor and an amazing laugh. I love his lectures.
- Professor Maguluru is the best professor I have ever had at Tech. His lectures are the most organized, detailed and informative that I have ever experienced. The practice problems he shares in class really help us understand the material better by relating it to real world examples. His guidance and passion for teaching really come through when you are learning from him.
- Going into 3232 I was not expected to have any fun, but it has become my favorite class i have taken at Tech. I will be doing a grading internship this summer, and Siva's teaching has inspired me to be placed on a derivatives team, because derivatives pricing is all modelled as Stochastic processes. Taking his class has also inspired me to sign up to take derivatives securities next semester and im planning on taking advanced stochastics the following semester after that. Professor Magaluri came to class every day excited to teach amd he constantly engaged us to think and work together in class. I feel like i have learned more useful material here than in my entire first year at Tech, and I am excited to learn more about stochastics in the future.
- He teaches in a practical, engaging, and effective way.
- Professor Maguluri shows his passion and enthusiasm for this course in each lecture through his clear lecture style. He has been one of the best professors, if not the best professor, that I have had at my time at Georgia Tech.
- He makes difficult concepts easy and interesting to understand. His enthusiasm for teaching encourages students, and is one of the best ISyE professors I've had.
- I think Professor Maguluri is a really helpful teacher. He is very clear in all his explanations and provides many different learning opportunities throughout the course. For example, he first explains the material, then works through example problems, then gives students a chance to work on problems with a partner, and provides very relevant homework sets. I have learned a great deal of material in this class. Thus, I believe he is a really great professor.

Dear CTL/BP Junior Faculty Teaching Excellence Award Selection Committee,

I am happy to be writing in support of my ISyE colleague Dr. Siva Theja Maguluri for the CTL/BP Junior Faculty Teaching Excellence Award. It's easy to say, just from talking to Siva Theja, how much he cares about his teaching, how much time he puts into it, and how important he feels it is. Those are all great qualities in a teacher, and I'm sure they will come through in the rest of his nomination packet. In this letter, I am going to focus more on his effectiveness and inspiration as a teacher: Having observed Siva Theja teaching, I believe I am in a good position to give a first-hand account of just how strong a teacher he is in these aspects.

Siva Theja inspires students to be interested and participatory. When I observed his class, Siva Theja had 93% of the registered students actually in his classroom (I counted myself, twice!). That is a very high fraction, especially for a required undergraduate course with a reputation for being dry and mathematical; it is clear that the students understand the value of experiencing his teaching in person. Moreover, students in his course were paying attention. I sat in the back, and saw remarkably few people on devices or doing other non-course things, and even most of those seemed to be paying attention at important times. Finally, students in his course asked (lots of) questions. Siva Theja has made them comfortable asking all sorts of questions, even the most basic ones that they'd often be afraid to ask.

Siva Theja gets students to make connections in ways that help them learn, and be excited about, the material. He does a very good job connecting the math to what the math means – this is not only helpful for the material in his course, but the general lesson of learning how to “read” math (i.e., how to see a mathematical expression and – rather than having one's eyes glaze over – interpret it quickly in terms of the real things that the math represents) is something that will stick with the students over the long term. In this way, Siva Theja gets the students connected to the material, and they see (as evidenced by the questions/discussion in class) and are excited by the potential applications.

Siva Theja helps students build their intuition and recognize the “coolness” in the material. The lesson I saw him give, which included lecture, Q&A, some Socratic style discussion, and exercises where the students worked in pairs, really got to the heart of the intuition behind the math. He did a nice job showing not just the general intuition, but also how to recognize when the general intuition is wrong and one has to rely on the math to help learn a new intuition. One of my favorite moments in Siva Theja's lesson was where he demonstrated something especially nice and said “Isn't that cool? I think so! – and it was clear that he had gotten a lot of the students to agree with him.

Overall, I think Siva Theja would be a very deserving winner of the CTL/BP Junior Faculty Teaching Excellence Award. I know how much he cares about, devotes time to, and believes in the importance of education, but even more importantly I can attest – having sat in on his class – that he's *really* good at it.

Sincerely,



Joel Sokol
Professor, H. Milton Stewart School of Industrial and Systems Engineering
Director, Master of Science in Analytics

PS – I should also point out, in case nobody else does, that Siva Theja has taken the lead in ISyE (despite being a junior faculty member) in helping our PhD students learn how to prepare for the job market. This isn't a traditional type of classroom teaching or even research advising, but (again from having seen it first-hand) I believe what he teaches is very valuable to our graduating PhD students (and once again, he's very good at teaching this too).

February 25, 2020

To whom it may concern:

I am writing to support Dr. Siva T. Maguluri's nomination for the 2020 CTL/BP Junior Faculty Teaching Excellence Award.

I attended one of his lectures for ISYE3232 *Stochastic Manufacturing and Service Systems* in Fall 2019 and had a chance to observe his teaching. For your information, ISYE3232 is mainly for junior students and considered to be one of the most challenging/mathematical courses in the ISYE undergraduate curriculum.

The first thing I noticed while I was sitting in the last row in the classroom was high attendance. Given that the class was at 4:30 pm and the classroom was large with a capacity of about 70 students, I did not expect the classroom to be full. It became clear why he had such high attendance as the lecture went on.

I have taught the same course multiple times and realized that he was on the most technical topic which is hard to motivate and engage students because it is full of definitions and theorems. However, he grasped students' interest and focus well through several things:

1. His use of whiteboards is very effective and well planned. It seemed that he simulated the entire lecture and knew exactly what to do. He came to the classroom early and wrote some mathematical results from early basic courses (such as calculus and linear algebra) on the left side of the front whiteboard. They were techniques he needed to derive some results during the day's lecture. This saves lecture time and simultaneously help students remind themselves of techniques they learned a few years ago but forgot. Throughout the lecture, he used two whiteboards: one on the left side of the classroom and one in front. He carefully chose where to write so that the number of times to erase is minimized and connections and transitions among definitions, examples and main theorems were smooth.
2. His engagement with students was impressive. He kept conversations with students by asking simple questions or telling interesting math facts (related to the lecture). He welcomes any answers which also encourage students to participate in discussions/Q&A without fear of giving a wrong answer.

3. His high energy makes the classroom atmosphere lively and vibrant. Whenever there was a chance, he introduced research topics related to examples covered in class. It helps attract highly motivated students to higher education and research in the STEM field.

I enjoyed hearing his lecture and walked out of the room myself getting useful teaching tips from his lecture. I admire his passion, enthusiasm, and commitment to excellent teaching and give him my strongest support for his nomination. Please feel free to contact me if you have any questions.

Sincerely,



Seong-Hee Kim, Ph.D.
Professor
H. Milton Stewart School of Industrial and Systems Engineering
Georgia Tech
Email: skim@isye.gatech.edu
Tel: 404-894-4551
<http://www2.isye.gatech.edu/~skim/>

Dear Members of the Selection Committee,

My name is Tejas Santanam, and I am a second year ISYE student here at Georgia Tech. It is my pleasure to wholeheartedly support Dr. Siva Theja Maguluri for the CTL/BP Junior Faculty Teaching Excellence Award. I was a student in Dr. Maguluri's ISYE 3232 class in Fall 2019. I came into the class apprehensive about what seemed like a difficult subject to grasp and came away with a plethora of knowledge and understanding, about both the course material and personal career aspirations. I would like to take this opportunity to talk about Dr. Maguluri's lecture organization, concept explanation skills, and ability to make cross-curricular connections as reasons for why he is more than deserving of this award.

A typical lecture in Dr. Maguluri's class consisted of review of the previous lecture's material, new material, and then a participation quiz on the new material. I had never had a course structured like this previously, but it was precisely this foundation that allowed me to gain command over the various units we covered. The revision served as a second view at material and an opportunity to clarify any doubts. The new material seemed to also directly flow from the previous day's topic allowing us to build further connections. The quizzes to were integral to my success in the course. Since they were participation quizzes, we didn't have the stress of a grade which allowed us to fully dedicate our brainpower to the content therein. Having a quiz problem also allowed us to see how a topic might be asked about in an exam or used in our studies beyond the constraints of the class. It was yet another point of concept reinforcement as well. The weekly homeworks were meant to challenge us, but not be overly difficult. I found that if we were able to comfortably solve the homework problems, the exam problems would subsequently be manageable as well. This multilayered reinforcement of information allowed me to build and

strengthen concepts in my mind. It also served to help people with different learning styles from listening in the lectures, to learning by doing in the homeworks.

In addition to impeccable course structure, Dr. Maguluri also boasts one of the finest abilities to succinctly and clearly communicate difficult concepts. He was very approachable and never looked down on anyone who asked questions. He would use a variety of examples to illustrate his point and would vary how the information was delivered so that everyone could understand it. For example, to explain the nuances of the newsvendor problem to the class, he would go through practice problems, show us Python code and visualizations, and tell us about real world examples like Delta flight overbooking or Amazon warehouses. This was helpful in gaining a true understanding of the material beyond just memorizing an equation. The real-world examples also showed me how I might use the information from the course in a job upon graduation. Dr. Maguluri was also adept at using humor and was always able to deftly pull out a pun or two that would have the whole class groaning. It helped us stay attentive and relate more to the person that was Dr. Maguluri as opposed to the monolithic educator façade I have too often seen from professors.

Lastly, Dr. Maguluri's ability to make cross-curricular connections and connect material to our future careers is unrivaled. On our second-to-last day of lecture, he brought in a panel of industry workers, PhD students, Master's students, professors, and more to talk to us about our potential career options. I learnt a lot from the guests about what my future could look like. I really appreciate that opportunity he created for us to learn and network. He also spent a great deal of his own money to buy *rasmalai*, an Indian sweet, for the entire class to eat during the panel.

The kind of care for students' learning, futures, and well-being expressed by Dr. Maguluri is unparalleled. I am honored to call him the best educator I have had at Georgia Tech and enthusiastically endorse him for the award.

Sincerely,

Tejas Santanam

February 15th, 2020

Dear selection committee:

It is my great pleasure to support the nomination of Dr. Maguluri to the CTL/BP Junior Faculty Teaching Excellence Award. I first met Dr. Maguluri in August 2017, when I joined his research group as a Ph.D. student. In Fall 2018, I had the great opportunity of being his student in a Special Topics class related to his research and his TA in an introductory course for Ph.D. students. I am a witness of the great educator he is, both in the classroom and as an advisor. He regularly teaches Stochastic Processes I, a course that Ph.D. students take in their first semester. Even though Dr. Maguluri was not at Georgia Tech when I completed that course, I have witnessed how the new generations of students see his class.

Everyone who has ever met Dr. Maguluri can tell how passionate he is about his job. He is very excited about solving new research problems, but also to share the solutions he and his students find. No result is so small that it does not deserve to be taught to others. He is always eager to share his new knowledge with other students in his research group, and with his colleagues. Also, his style of advising Ph.D. students reflects his exceptional teaching skills. He is always available to discuss new problems, he teaches his students how to think of new problems, and he is continuously aware of the intuition behind technical results. But not everything is research. Dr. Maguluri also helps and inspires his students to improve soft skills, such as oral presentations and networking. A clear example of this is his support at conferences. I have only been to three conferences during my Ph.D., but I feel I already know many people, and I am comfortable giving presentations. All because he took the time to help me preparing my presentations and to introduce me to famous researchers in our area.

Dr. Maguluri is also an incredibly talented teacher in the classroom. He genuinely cares about students' understanding, and he makes the class highly interactive. All the enthusiasm he puts on his classes makes students want to learn more. For all his classes, he prepares neat lecture notes to help students focus on paying attention to the lecture instead of worrying about taking notes. Also, when explaining complex concepts, he focuses first on the intuition,

and then he moves to the technical details, always referring to the big picture. He starts every class with a summary of the previous lecture, where he highlights the essential topics, and he reminds the intuition behind them. I would be lying if I said his assignments and exams are easy, but all the evaluations he prepares are thought to be meaningful problems and to teach something. He will never give a list of questions 'to practice.' Instead, all his questions tell a story about the contents, or they suggest a different way to understand what he covered in class. Dr. Maguluri believes in challenging his students to improve their ability to think in different ways and to make sure they comprehend the contents he includes in class. Also, he is always available and eager to discuss problems in office hours, or even in extraordinary meetings. It has been a real pleasure to be in his class and to learn from him, both content and teaching style.

It has been an honor to work with Dr. Maguluri during the last 2.5 years. It is incredible how such a young faculty can transmit so much knowledge, inspiration, and passion to his students. It does not matter if you are in his class or his research group, all he cares about is that you understand what he is trying to explain and that some curiosity to learn more arises from the discussion. I am genuinely convinced that he deserves this award.

I would be happy to answer any additional questions by email or phone.

Sincerely,

A handwritten signature in black ink, appearing to read "Daniela Hurtado", enclosed within a large, stylized oval flourish.

Daniela Hurtado-Lange
Ph.D. student in Operations Research
Georgia Institute of Technology
Email: d.hurtado@gatech.edu
Phone number: (404)580-9662

Dear CTL Awards and Selection Committee:

It is my honor to write a letter for Prof. Maguluri sharing our academic and research journey. I met Prof. Maguluri in my undergraduate sophomore year when I was taking “Stochastic Manufacturing and Service Systems” with him. In his class, besides demonstrating how to apply existing models to improve systems, he always went further to motivate us to think about why specific models can solve corresponding problems. Keeping all his questions in mind, I started wondering what motivated previous scholars to think in those particular directions and what steps led them to discover and validate the models. All my curiosities and confusions were effectively addressed by his clear presentation of the proof structures and stringent illustration of logical details. Knowing the concrete logical steps that formed the proof of the formulas convinced me why the formulas work and also showed me how to flexibly adapt them to different scenarios.

Attracted by the beauty of mathematical proof and the sense of fulfillment from seeing through the technical mechanism, I started a research project with Prof. Maguluri, which finally led me to decide pursuing a career in academia. During the stage of preparing myself with more mathematical knowledge and skills for the research, Prof. Maguluri offered extremely helpful advice on the classes to take. He carefully looked into the course contents and provided me with comprehensive information on how the classes would benefit me on specific theoretical abilities. Since some of the classes were PhD level, he also provided great help in getting the department’s permissions for me to register for those classes.

In addition to taking classes, he guided me on how to efficiently read and learn from papers and how to make good presentations. He organized a weekly reading session within his research group with each of us taking turns to present one paper per week. During the first time I presented a paper, he guided me carefully throughout the paper, demonstrating how to extract the general structure of the problem, how to summarize the overall layout of the proof as well as how to fully understand the technical details. After my presentation he gave detailed feedback on every piece of my presentation contents, illustrating how to express the paper contents better to the audience. After that time, I started to gradually independently read papers and prepare presentations, but every time I learned something new on reading or presenting through his well-rounded feedbacks.

Throughout the research, he gradually lifted the difficulty levels of my tasks according to my progress in classes and research techniques. Every time we faced a new challenge, he encouraged me to first investigate by myself, think in my own way and try my own method before conveying the standardized methodologies widely used in the area. By thinking ahead on my own and personally confronting difficulties and making mistakes, I had a deeper impression on the standardized methodologies, and managed to more thoroughly understand the reasons why they can solve the problems more efficiently. Through the continuous progress and positive interactions, we managed to make a publication together in my junior year and recently we are about to submit another paper on our work in my senior year.

Enjoying the process of academic research, I decided to apply for PhD programs in my senior year. During the application processes, he offered generous help on finalizing my target schools, revising my statement of purpose and writing recommendation letters. Under his care

and guidance, I received five PhD offers and ended up joining the Operations Management program at the University of Chicago Booth School of Business. As a PhD student now, I still think of my old days at Georgia Tech with Prof. Maguluri and our excitement in face of challenges as well as our pride in our research progress. That joyful memory keeps motivating me through out the long track of PhD study and Prof. Maguluri, as a role model, motivates me to become an independent researcher and warmhearted teacher like him in the future.

Best regards,
Xiaofan Wu
PhD student
The University of Chicago Booth School of Business