NEW FACULTY

Welcome to Assistant Professor K.D. Gayan Maduranga. Assistant Professor Maduranga joined our faculty on August 1st. He received his B.S. in Mathematics from the University of Sri Jayewardenepura (Sri Lanka 2009), his M.S. in Mathematics from Tennessee Tech University (2013), and his Ph.D. in Mathematics from the University of Kentucky (2020).

When asked to provide a little information about himself, Assistant Professor Maduranga had the following to say, "I am happy to be back again and join as an assistant professor in the Department of Mathematics at Tennessee Tech University. My research interests lie in Machine learning/Deep learning applications focusing on Recurrent Neural Networks (RNN) and other networks. I was focusing on hyperparameter optimization in machine learning/deep learning for computer vision applications during my postdoctoral research at the University of Notre Dame. I received my Ph.D. from the University of Kentucky in 2020, with a focus on understanding and exploiting unitary and symmetric structures in deep neural networks.

I was born in a small village in Sri Lanka called Walpola. I finished high school and a bachelor's degree in Sri Lanka before moving to the United States to pursue a Ph.D. in the field of Mathematics in August 2011. First, I enrolled at Tennessee Tech University to pursue a master's in mathematics. Then I moved to Idaho State University and transferred to the University of Kentucky and completed my Ph.D. in August 2020. In my Ph.D. research, I developed a naval complex unitary RNN using scaled Cayley transform and developed a symmetric structured convolutional neural network (CNN) to handle secondary structure prediction of RNA sequences and contact map prediction of Protein sequences using deep learning architectures. I was offered a postdoctoral research associate at the University of Notre Dame in fall of 2020. The research involves hyperparameter optimization techniques focusing on computer vision applications.

I started as an assistant professor in the Department of Mathematics at Tennessee Tech University this fall. I am glad to be back and join the wonderful community and plan on researching in the deep learning field. I am looking forward to improving my ability to observe my students so that I can better identify each student's strengths and weaknesses and figure out ways to help them use their strengths to improve their confidence and performance. When I am not working, I enjoy spending time with my family."

MATH CLUB

The Math Club had their first meeting of the year on Tuesday, August 30. Officers are: President, Blaine Sweider and Vice-President, Meredith Hall.

If you would like to join the Math Club, contact Blaine or Meredith. Math Club dues are $5 for the year and can be paid to Patsy in the math office, Bruner 217.

Remember, the Math Club isn't just for math majors. It's for anyone interested in math.

GRADUATE SEMINAR

The Graduate Seminar is held each week on Tuesdays from 2-2:45pm in Bruner 309. Faculty and students are invited to give talks on their research interests. If you would like to give a talk at the Graduate Seminar, contact the graduate advisor, Amy Chambers, at achambers@tntech.edu.

Here is a link to this fall's Graduate Seminar schedule:
https://www.tntech.edu/cas/math/graduate-seminar.php

COOL MATH JOBS

Operations Research Analysts use mathematics and logic to solve complex issues. They use advanced techniques such as optimization, data mining, statistical analysis, and mathematical modeling to develop solutions that help businesses operate more efficiently and cost-effectively.

A variety of businesses and organizations use Operations Research Analysts. UPS uses them to chart the flow of packages and manage distribution. Memorial Sloan-Kettering Cancer Center in New York uses them to design radiation treatment plans. The largest employers of Operations Research Analysts are finance and insurance companies, followed by companies that provide professional, scientific, and technical services. Other companies in manufacturing and the federal government also have openings for Operations Research Analysts.

The median salary for an Operations Research Analyst is around $82,000 a year. The job outlook for this position is projected to grow 25 percent over the next ten years, which is much faster than the average for all occupations.

So how do you become an Operations Research Analyst? That's easy. Get a degree in mathematics. The typical educational requirement for entry-level positions in this field is a bachelor's degree in math, business or industrial engineering. Some employers may prefer a master's degree. Coursework in both math and computer science is important for this job as is keeping up with technological advances and analytical methods.

People who work as Operations Research Analysts find it an enjoyable occupation. The job has a low stress level and good work-life balance with prospects of promotions and higher salaries.

Here's a short video from YouTube that might help you decide if a job as an Operations Research Analyst is the right job for you.
https://www.youtube.com/watch?v=IBWYsytaCbw

WAY TO GO!

We had several of our faculty receive service pins at the University faculty meeting held at the beginning of the semester. They are listed below:
- Damian Kubiak, 10 years
- Marcus Rogers, 10 years
- Stacy Brown, 15 years
- Shelly Forgey, 15 years
- Motoya Machida, 20 years
- David Smith, 20 years
- Yung-Way Liu, 35 years
- Brian O'Connor, 45 years

Damian Kubiak pictured w/Provost Lori Bruce and Interim A&S Dean Jeff Roberts

Mark Rogers pictured w/Provost Lori Bruce and Interim A&S Dean Jeff Roberts

Shelly Forgey pictured w/Provost Lori Bruce and Interim A&S Dean Jeff Roberts

Motoya Machida pictured w/Provost Lori Bruce and Interim A&S Dean Jeff Roberts

David Smith pictured w/Provost Lori Bruce and Interim A&S Dean Jeff Roberts

Brian O'Connor pictured w/Provost Lori Bruce and Interim A&S Dean Jeff Roberts

Not pictured: Stacy Brown and Yung-Way Liu

One of our faculty, Motoya Machida, also achieved the rank of full professor this year. Congratulations Professor Machida.

Thank you all for your service to the University and to the Math Department.

WHAT'S HAPPENING

This summer the Math Department had several visits from our math alumni. Here's what some of our esteemed alumni have been up to.

Ben Howard (B.S. '98) (M.S. '2000) stopped by the office this summer just to say hello. He brought his three beautiful daughters to visit Tech's campus.

Ben graduated with both his bachelor's and master's in math from TN Tech before he went on to receive his Ph.D. Ben now lives in New Jersey and works as a cryptographer.

Alumna Carla Viteri Nova (B.S. '17) paid us a visit this summer. Since Carla graduated from TN Tech, she has received a master's in math from Oakland University and is now working as a data scientist in Michigan. Congratulations on your achievements, Carla.

Katie Fanning Presson (B.S. '04) has been working for NASA for over 15 years. She most recently has been working with the Space Launch System (SLS) project getting ready for the Artemis 1 mission with both ground and launch operations for the upper

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stage. She transferred in March 2022 to Microgravity Science Glovebox and Life Science Glovebox project office, where she is now the Deputy Project Manager. These payload racks operate on the International Space Station in support of the amazing research being performed. Katie and her family have moved back to Tennessee and live on a small farm now.

Brad Schwer (B.S., Physics 2006/M.S., Math 2008) and Michelle Schwer (B.S., Physics 2008) stopped by with their two children on their way to visit family. Michelle is now an assistant professor at Brown University and a medical physicist at Rhode Island Hospital, giving Brad the opportunity to stay at home with their children.

Deji Badiru (B.S. Industrial Engineer-ing '79, M.S. Mathematics '81, M.S. Industrial Engineering '82) visited the math office on May 16. He is shown here with Allan Mills, Interim Associate Dean and Jeff Roberts, Interim Dean of the College of Arts and Sciences.
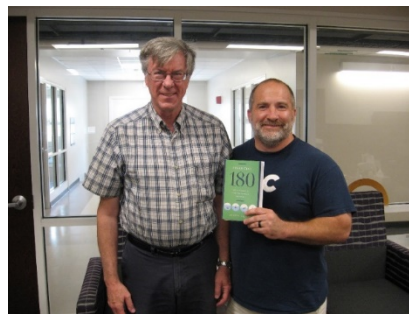
Badiru is now the dean of the Graduate School of Engineering and Management at the Air Force Institute of Technology. See more of his achievements in a related article.

Jason Cline (B.S. Math Education '98), not a math major, but still considered a valuable alumnus of the Math Department, stopped by this summer while visiting TN Tech. Jason was one of our student workers and spent many hours in the departmental office. He is pictured here with Associate Professor Brian O'Connor.

Jason has spent time since graduation working in education and non-profit organizations. He taught high school math and was a football coach in the Sumner County school system for several years. For thirteen years, he was the main sponsor of the Fellowship of Christian Athletes there. During that time, he became interested in being a financial coach. As he explained, when he was in his twenties, he really didn't know how to budget. When he got married, though, he got his act in gear, and has been helping others in this area for over fifteen years. In 2018, he became a full-time financial coach, developing a system to help people get and stay afloat. The system is explained in his new book: Financial 180: Give Generously, Save Consistently, Live Wisely. In this 96-page guide, he outlines how people can move gradually and steadily toward these goals. In addition to this publication, Jason also speaks on this topic at churches, businesses, and non-profit groups.

Jason remembered fondly the math teachers he had here at Tennessee Tech: Reggie Mazeres, Ron Sircy, Jake Beard, Bill Jones, Alice Mason, Mike Breen, Ramesh Garimella, Jeff Norden, Allan Mills, and Madhumati Gandhi.

Jason currently lives in Hendersonville, TN with his wife, a librarian, a daughter who is a sophomore in high school, and a son who is in 8th grade.

It's always a treat to have alumni stop by the office to let us know how they're doing. We enjoy seeing each and every one of you. If you're ever in the area, don't hesitate to stop by to visit.

DISTINGUISHED ALUMNUS

Adedeji Badiru (B.S. Industrial Engineering '79, M.S. Mathematics '81, M.S. Industrial Engineering '82) recently received the 2022 Industrial Engineering and Operations Management Society International Frederick Winslow Taylor Award. The IEOM Frederick Winslow Taylor Award is the highest and most prestigious award presented annually to one member of the Industrial Engineering and Operations Management Society International. This award recognizes IEOM members who have distinguished themselves by their long and exemplary dedication and contributions to the profession and commendable service to the IEOM Society. Nominees for this award must be globally recognized in the IEOM field through their scholarly publications, leadership accomplishments, technical achievements, including patents, scientific methods invented to improve and elevate mankind welfare, and long and distinguished service to the professions and community. Supporting documentation must be presented to be eligible for this award.

Dean Badiru has been a long-standing supporter of Tennessee Tech and he recently donated funds to establish the Carroll Viera Appreciation Scholarship Endowment for students studying English. This fund is to show his appreciation for friendship and mentorship that Professor Emerita Vierra (retired English professor, College of Arts and Sciences) provided him throughout his academic career at Tennessee Tech.

Congratulations on your accomplishments Deji and thank you for your gift to the University.
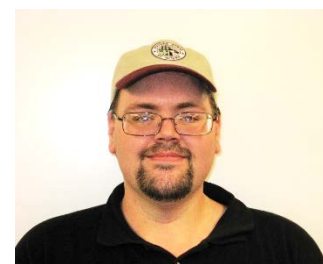
MATH MAJOR SOCIAL

The Math Department held a social for math majors and math faculty on Thursday, September 1. Pizza and drinks were provided. We had a great turn out for this meet and greet and hope to have more in the future.

IN MEMORIAM

We are sad to inform you of the passing of a beloved former Tennessee Tech math major and adjunct faculty member, Forrest Garwood (B.S. '11, M.S. '14). Forrest passed away suddenly at his home in Crossville, TN on Tuesday, July 12, 2022.

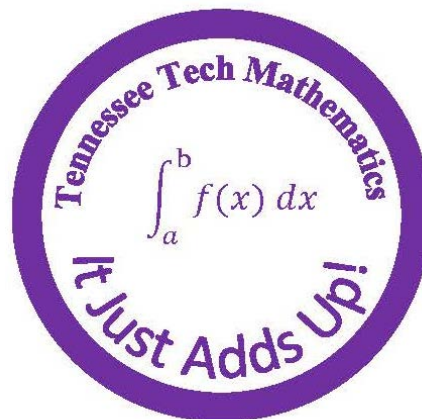Forrest was born on March 7, 1977, in Jackson, Mississippi. He is best known for

his gentle ways and kind demeanor. He began his education at Tennessee Tech as a non-traditional student in the fall of 2008 after receiving an associate's degree from Roane State Community College. He completed his bachelor's degree in mathematics and then was accepted as a mathematics graduate assistant. The next two years were spent studying graduate math courses, teaching classes for the math department, and working on his thesis. After receiving his master's in math, Forrest worked as an adjunct for the department until his appointment as a math instructor at Volunteer State Community College.

Forrest is survived by his parents, Bruce and Janis Garwood of Crossville, Tennessee and his sister, Rachel Garwood Hackett of Westbrook, Maine. A family-only very private ceremony was held.

Please consider a gift to the Mathematics Department to help support one of our scholarships or for discretionary spending to bring in guest speakers, purchase research software for our graduate program or to fund an undergraduate student to present at a conference. Your generosity can make more opportunities available for all our students.

*If you wish to donate to the Mathematics Department, **please click this link** and select "Mathematics Department" from the dropdown menu. If you prefer to donate to a specific fund, please select "Other" from the dropdown menu and enter the name of the fund. Your gift is truly appreciated!*

$$\int_a^b f(x)\, dx$$

Tennessee Tech Mathematics

It Just Adds Up!

Follow us on Instagram @tntechmath

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