



Indian Institute of Technology Madras
Office of Alumni and Corporate Relations



PROF. SRIDHAR TAYUR

ANNUAL REPORT 2022

JANUARY 2023

Message from Director



Prof. KAMAKOTI VEEZHINATHAN
Director, IITM

IIT Madras continues to retain her top position for the seventh consecutive year, in the National Institute Ranking Framework, thanks to the world class research of its faculty and students. The contribution and support of Alumni and well-wishers like you has crucially helped this standing and stature. Our achievements in research, education, innovation and entrepreneurship have also earned us the recognition of an 'Institute of Eminence' as well as the top position in the Atal Innovation Ranking from the Government of India.

The institute is making an indelible mark with her 'research with impact' in several areas including quantum computing, drinking water technology, industrially relevant mathematical models for governance, rendering cancer-cure more effective. Our centres of excellence, the Center for Innovation, Nirmaan – the pre-incubator, the Incubation Cell, technology centres such as 'IITM-Pravartak' and others, work in unison for not just our nation's building, but societies world-wide. We aspire to be locally impactful and globally relevant through all these efforts.

Towards exploring new research frontiers, a Department of Medical Sciences and Technology is being launched to conjoin medicine and engineering. Similarly, a School of Sustainability is on the horizon to research sustainable practices in the Global South. The campus is moving towards 'carbon-net-zero' goal through water conservation by 100% recycling, efficient garbage disposal, and electrification of vehicles. The traditional education system is undergoing a paradigm shift, with our online Bachelor of Science programme in Data Sciences and the National Program of Technology Enhanced Learning, that have won Gold in the 'Lifelong Learning' category and Silver in the 'Best Online Program' category of the Wharton-QS Reimagine Education Awards 2022 respectively. Your alma mater is leading this revolution from the front.

Such achievements are not possible without the deep-rooted faith and support of alumni and well-wishers such as yourself. We are indebted to you for your generous, bountiful, and impactful contributions. On behalf of IIT Madras, I offer you our deepest gratitude for continuing to strengthen the Institute. Together with your support, we are confident of building an IIT Madras that is more inclusive, diverse, and enabled by an ecosystem to be nationally relevant and globally recognised. Thank you!

Message from Dean



Prof. MAHESH PANCHAGNULA
Dean, Alumni & Corporate Relations,
IITM

I express my heartfelt gratitude to Prof. Sridhar Tayur and his family for your generous support to IIT Madras

We appreciate your passion in supporting the causes you do and I assure you that your contributions will be optimally utilised. This report has been compiled by your 'Donor Relationship Manager', to convey how your largesse has touched lives and made a difference at IIT Madras. In keeping with the rapid, contemporary strides in science, technology we have set ambitious goals for ourselves - your continued enthusiasm and support will help us greatly in these endeavours.

IIT Madras that you left behind as a graduating student is very different from the IIT Madras of today. It is far more diverse in its set of pursuits, more green and more research-focused. And yet, it remains unchanged from your time that, it is still the best Institute in the country, and attracts the best students that India has to offer to come and make a mark. I also cordially invite you to visit your campus to see for yourself, the impact of your contribution, and the growth and transformation the Institute has undergone over the years.

We can never express our gratitude enough for all that you have done. Thank You !

Causes supported

- Tayur Prize
- RAGS Family Foundation Chair

Tayur Prize

The Tayur Prize presents the students with an opportunity to come up with innovative solutions for problems faced in Quantum Technology. Each year a theme is chosen for which the students come up with solutions/applications and the best are awarded. The feedback from a few award winners are shared here:



Apurva Padhye

Senior undergraduate student
First Prize – 2022 – “Binary Classification”

It was very exciting to learn about a new area of research (quantum integer programming) and use new ideas to solve an important and relevant problem. The competition motivated me to push my boundaries and give my best effort to the task. The process was a great learning experience, and winning the prize made me believe in myself. It gave me the confidence that if I work hard, I can achieve my goals. I am thankful to Prof Sridhar Tayur for his valuable guidance and support in the project.



Sai Sakunthala

First Prize – 2022 – “Binary Classification”

The way we practically implemented the concepts we learnt on real life problem has pushed me to give my best. Only after doing this course and doing this project, i was able to identify my interest in the subfield QML, in which I wish to continue my further studies. I am really grateful that we participated in the competition and thank you prof Sridhar Tayur sir for your valuable guidance throughout the term of project which helped us a lot to find the right direction with the project.



Gautham Umasankar

1st Year Ph.D. Student
Applied Physics, Yale University
First Prize – 2020 – Time Multiplexed CIM

"I am very grateful to Prof. Tayur for setting up the Tayur prize, and for honoring us as award winners. As I was working on my project to create a room temperature Ising machine, the guidelines and challenges posed by Prof. Tayur gave us a goal to work towards. My passion for engineering complex systems and non-conventional computation was reinforced through this endeavour. Winning the award encouraged my pursuit of research in non-conventional computation, particularly quantum computing. I would also like to take this opportunity to express my gratitude to Prof. Anil Prabhakar and Prof. Nitin Chandrachoodan, who were instrumental in our achievement. Their patient instruction and guidance were invaluable."

RAGS Family Foundation Chair

The RAGS Family Foundation Chair is currently occupied by Prof. Chandrasekharan Rajendran, Department of Management Studies.



Chandrasekharan Rajendran Ph.D., Dr.rer.pol.h.c., FNAE
Professor & RAGS Family Foundation Institute Chair
Department of Management Studies
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Specialization/ Areas of Interest

Industrial Engineering, Production and Operations Management, Supply Chain Management, and Quality Management.

Especially related to Scheduling in Manufacturing and Service Systems, Supply Chain Network, Inventory and Logistics Management, Operations Research Applications to Analytics, Empirical Studies on Quality, Heuristics and Meta-heuristics (such as genetic algorithms, simulated annealing and swarm intelligence), and Simulation Modelling and Applications.

University of Passau – IIT Madras (DAAD) Project for Faculty and Student Exchange (for the year 2022): one of the coordinators (an applicant of the granted project)

The above DAAD (German Academic Exchange Service) Project in which Professors Hans Ziegler and Franz Lehner (from University of Passau), and Saji Mathew and Chandrasekharan Rajendran are the coordinators has resulted in the following visits of IIT Madras research scholars on research work and IIT Madras faculty members as Visiting Faculty (for teaching one full course).

The share in the DAAD Project for IIT Madras students and faculty members amounts to Euro 51,000 for students and Euro 13,200 for faculty members (a total of Euro 64,200 for the Department of Management Studies).

All the following visits are fully funded out of the above DAAD Project, including travel (Euro 1050) per visit per person, and scholarship of Euro 1200 per month per Ph.D. Scholar and Euro 850 per month per MS Scholar (tax free). Faculty members are awarded Euro 3300 per month per person as a lumpsum amount (tax free).



MS and Ph.D. Scholars

- **Teena Thomas (Ph.D. Scholar):**
January to September 2022.
- **Sreelekshmi Chandran (Ph.D. Scholar):**
January to September 2022.
- **Madhavan Namboodri (Ph.D. Scholar):**
January to March 2022.
- **Tulsi Das Sharma (MS Scholar):**
April to September 2022.
- **Kruthuka Baskaran:**
July – December 2022.
- **Pratyush Yadav:**
October to December 2022.

Faculty Members

- **Prof. A Thillai Rajan:**
June-July 2022 (one month).
- **Prof. Vaibhav Chawla:**
May-June 2022 (one month).
- **Prof. Saji Mathew:**
July 2022 (one month).
- **Prof. Chandrasekharan Rajendran:**
November-December 2022 (one month).

Courses Taught

Taught courses at IIT Madras; also taught a course to students at University of Passau, Germany (ranked within the top 35 young universities in the world by Times Higher Education for more than 3 years).

Publications in 2022

International Journals:

1. JOHN, K., PAUL, B., RAJENDRAN, C., and ZIEGLER, H., "Priority fractional rationing (PFR) policy and a hybrid metaheuristic for managing stock in divergent supply chains". *Sadhana*, Vol. 47:254 (2022).
2. RAJESH, R., RAJEEV, R., and RAJENDRAN, C., "Corporate social performances of firms in select developed economies: A comparative study". *Socio-economic Planning Sciences*, Vol. 81, 101194 (2022).
3. Kumar, R.R., GANESH, L.S., and RAJENDRAN, C., "Quality 4.0 – a review of and framework for quality management in the digital era". *International Journal of Quality and Reliability Management*, Vol. 39, No. 6, 1385-1411 (2022).
4. KRISHNAN, C.S.N., GANESH, L.S., and RAJENDRAN, C., "The Square Inch quilting studio: Survival strategies for a lifestyle enterprise". *International Journal of Entrepreneurship and Innovation*, Vol. 23, No. 2, 99-110 (2022).
5. KRISHNAN, C.S.N., GANESH, L.S., and RAJENDRAN, C., "Entrepreneurial intervention for crisis management: Lessons from the Covid-19 pandemic's impact on entrepreneurial ventures" *International Journal of Disaster Risk Reduction*, Vol. 72, 102830 (2022).
6. KRISHNAN, C.S.N., GANESH, L.S., and RAJENDRAN, C., "Management accounting tools for failure prevention and risk management in the context of Indian innovative start-ups: a contingency theory approach". *Journal of Indian Business Research*, Vol. 14, No. 1, 23-48 (2022).

Book Chapters in Edited Book (Springer) in 2022:

7. SANKARAKUMARASWAMY, S., KAUR, A., RAJENDRAN, C., and ZIEGLER, H., "A study on inventory models for perishable items in a serial supply chain operating with price markdowns". In: Ghosh, D., Khanra, A., Vanamalla, S.V., Hamid, F., and Sengupta, R.N., (Eds.) Studies in Quantitative Decision Making, 75-98, Springer Nature Singapore Pte Ltd., Singapore (2022).
8. HANSUWA, S., and RAJENDRAN, C., "A mathematical model for scheduling and rostering of staff with real-life considerations: The case of Indian call centres". In: Ghosh, D., Khanra, A., Vanamalla, S.V., Hamid, F., and Sengupta, R.N., (Eds.) Studies in Quantitative Decision Making, 143-163, Springer Nature Singapore Pte Ltd., Singapore (2022).

Community Service:

Continue to support charitable institutions such as Blue Cross of India, Udavum Karangal and Gnanadarshan Seva Foundation (at Chennai), especially with monetary contributions.



WE ARE GRATEFUL TO YOU!

Prof. Sridhar Tayur



Thank you for your sustained generosity to IIT Madras over the years. Contributors such as yourself enable our students and Professors to dream big and work towards a better and brighter future. We hope you are proud of your alma mater and how it has remained steadfastly committed to academic and research excellence since your time here. You and your family have been instrumental in facilitating this significant growth.

Our efforts to nurture the culture of academic excellence that is the hallmark of IIT Madras - quality education, cutting-edge research, and unfettered creativity shall continue. We are privileged and humbled to have you and your family walking with us along this trail. We wish you and your family the best always in all walks of life!



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