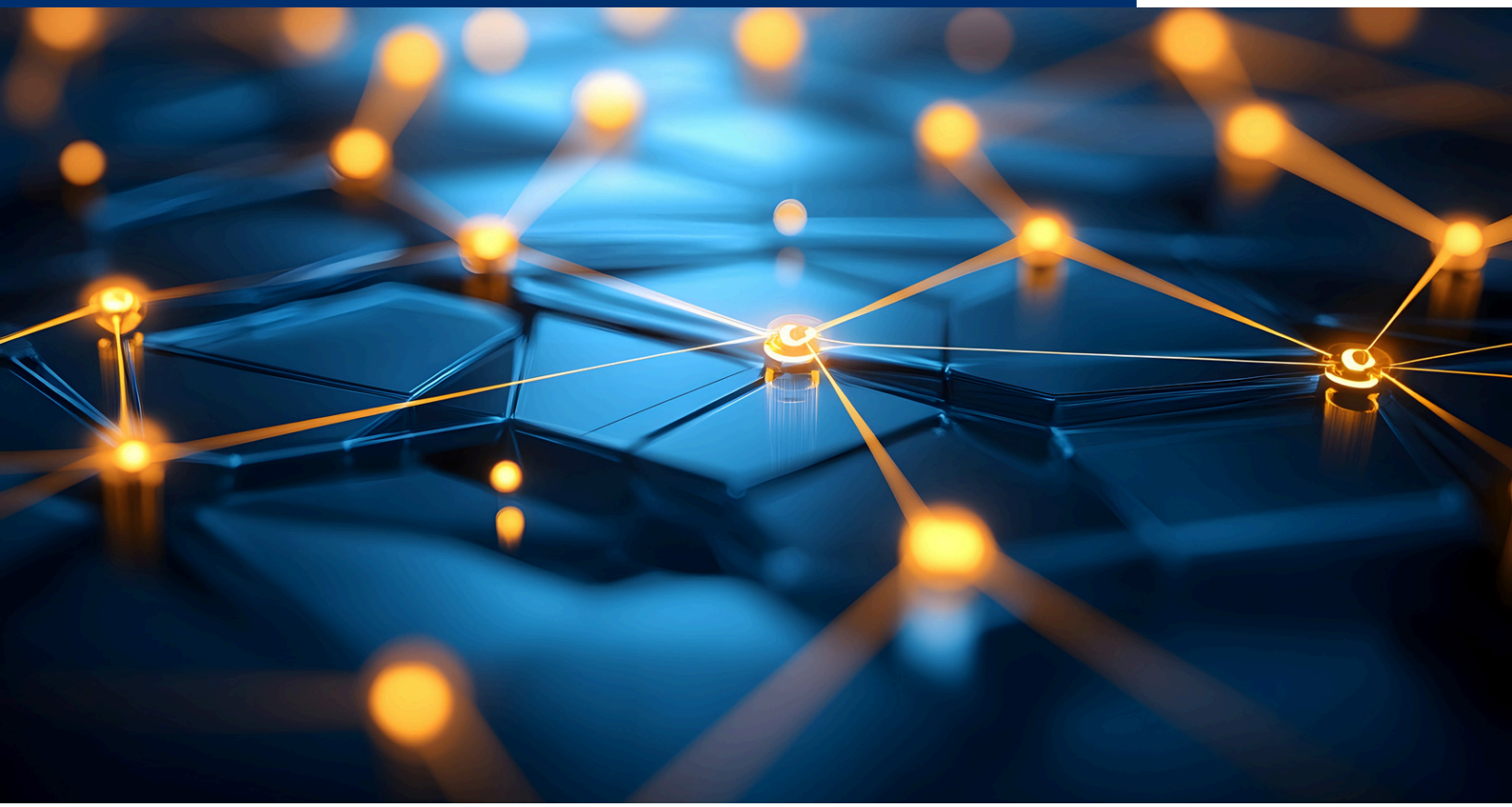
DEPARTMENT OF ELECTRICAL AND ELECTRONIC ENGINEERING

Newsletter

University of Mauritius Diamond Jubilee Edition

2025



60 YEARS OF EXCELLENCE
SCIENTIA SALUS PATRIAE
1965-2025

UNIVERSITY OF MAURITIUS

HONOURING OUR PAST AND
EMPOWERING FUTURE GENERATIONS

Message from the Head of Department

Dr Vandana Bassoo
Associate Professor

As the University of Mauritius celebrates its 60th Anniversary, the Department of Electrical and Electronic Engineering (EEED) proudly reflects on its own journey as one of the University's pioneering departments. EEED has been at the heart of technological education in Mauritius, producing engineers who have shaped national infrastructure, energy systems, communication networks, and automation processes. The Department's legacy is deeply intertwined with the University's vision of excellence, innovation, and service to society.

Over the years, EEED has continuously evolved to keep pace with rapid technological change and the dynamic needs of industry. Today, the Department offers three flagship undergraduate programmes—BEng (Hons) Electrical and Electronic Engineering, BEng (Hons) Telecommunications Engineering with Networking, and BEng (Hons) Mechatronics Engineering (in partnership with MPED) —which together represent a perfect blend of foundational engineering knowledge and multidisciplinary innovation. These programmes continue to attract bright and ambitious students, who are nurtured to become leaders and innovators for a rapidly changing world.

Recent years have been particularly momentous for the Department. In 2023, during the accreditation visit by the Institution of Engineers Mauritius – Engineering Accreditation Board (IEM-EAB), the BEng (Hons) Telecommunications Engineering with Networking programme was granted a five-year accreditation with no deficiencies. Building on this momentum, in June 2024, the BEng (Hons) Electrical and Electronic Engineering programme received accreditation from the Engineering Council of South Africa (ECSA), reaffirming the international recognition and quality of our curriculum. Both remarkable achievements that reflect the dedication of both staff and students in upholding the highest academic and professional standards.

The Department has also made significant strides at the postgraduate level. The MSc Renewable Energy and Smart Electrical Systems (Online) was delivered for the first time this year, attracting a record number of applicants. Designed to reach working professionals and international learners, this fully online programme demonstrates EEED's adaptability and forward-thinking approach in embracing digital learning. The commitment of our staff members—who have worked tirelessly to deliver a highly technical programme through varied coursework and interactive online modes—has been truly exemplary.

Our Department's success is built on the unwavering commitment of its academic and technical staff, whose collective expertise and passion drive excellence in teaching, research, and service. Their collaborative efforts have sustained the Department's reputation for quality and innovation.

It is both an honour and a privilege for me to serve as the first woman Head of Department in EEED's distinguished history. This milestone is personally meaningful and symbolically important. I hope this achievement will inspire more young women to pursue careers in engineering and to lead with vision and confidence.

On this momentous occasion, I extend warm congratulations to the University community—past and present—for its shared commitment to advancing education and innovation. May this 60th Anniversary inspire us to continue building a smarter, more sustainable, and connected future.

Inside

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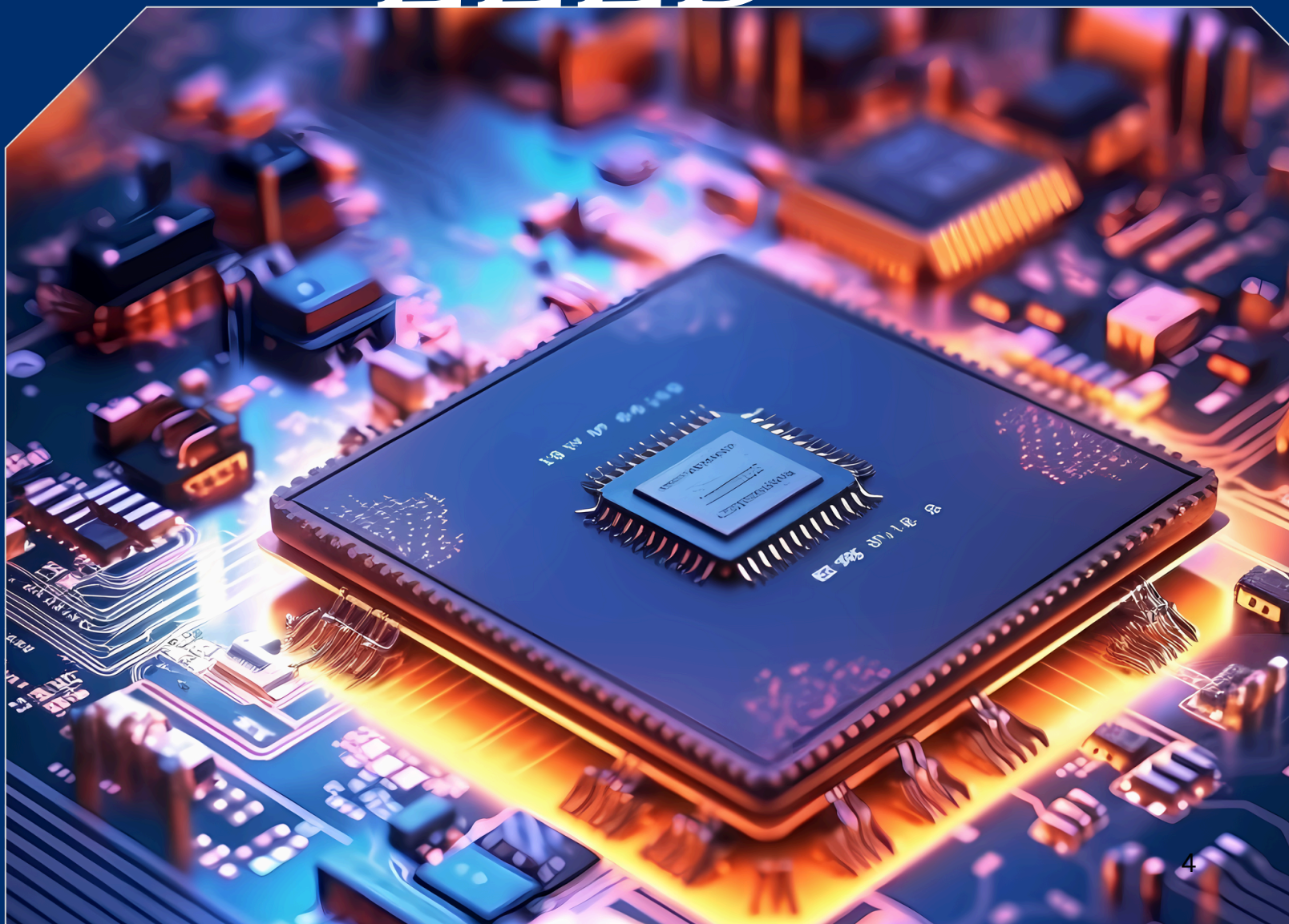
Legacy *and* Evolution *of* EEED



Tracing the Evolution of the Department

Dr Rajeshree Ramjug-Ballgobin
Senior Lecturer

The Department of Electrical and Electronic Engineering at the Faculty of Engineering was first established as the Electrical Engineering Division within the School of Industrial Technology in 1968. In the early 1970s, a joint diploma in Mechanical and Electrical Engineering was offered to meet the growing need for engineers in the country. This led to the development of the B.Tech/Diploma in Electrical and Electronic Engineering course, which was introduced in 1976.

In 1997, this programme was replaced by the BEng (Hons) Electrical and Electronic/Communication Engineering, which enabled students to graduate with either a BEng(Hons) in Electrical and Electronic Engineering or a BEng(Hons) in Electronic and CommunicationEngineering, depending on their choice of modules during their final year of studies. The BEng (Hons) Mechatronics Engineering programme was introduced in the same year in collaboration with the Mechanical and Production Engineering department. Two BSc programmes, namely the BSc(Hons) Electronic with Computer Science and the BSc(Hons) Information and Communication Technologies, were also subsequently launched in collaboration with the Computer Science Department.

With the rapid development of the Communication/Telecommunications sector in Mauritius in the late 2000s and the growing student interest in the programme, the department decided to offer the BEng(Hons) Electronic and Communication Engineering as a separate programme in 2009. As the Telecommunications sector continued to develop rapidly, the demand for Telecommunications Engineers increased significantly and a BEng (Hons) Telecommunications Engineering with Networking programme was launched in 2016. In 2024, the department added two Msc programmes to its portfolio, namely the M.Sc. Renewable Energy and Smart Electrical Systems and the M.Sc. Telecommunications with Internet of Things (IoT).

The department started with only male staff members and students. Our initial struggle to recruit female engineering students, with percentages below 5% in the early 2000s, was attributed to societal gender stereotypes and a lack of female role models. However, a shift occurred by the early 2010s, driven by rising interest in STEM among women. This led to a significant decrease in the gender gap and resulted in nearly 50% female enrollment in some engineering programmes by the 2020s, a substantial improvement from the earlier period. This progress includes the addition of two female academic staff members in 2009 and 2013, and a female technical assistant in the late 2000s.

Over almost 60 years, the department has successfully adapted to technological changes in the industry by updating its curriculum and facilities to foster adaptive, skilled professionals. This evolution has led to successful alumni who now hold high-profile positions in well-regarded companies worldwide, underscoring the department's commitment to preparing graduates for evolving work environments.

EEE Department Timeline at a Glance

Year / Period	Milestones
1968	Origin — Electrical Engineering Division established within the School of Industrial Technology.
Early 1970s	Joint Diploma in Mechanical & Electrical Engineering introduced.
1976	Launch of BTech / Diploma in Electrical & Electronic Engineering.
1997	Major restructuring: • New BEng (Hons) Electrical & Electronic / Communication Engineering. • Introduction of BEng (Hons) Mechatronics Engineering.
Late 1990s and early 2000s	• Launch of BSc (Hons) Electronic with Computer Science and BSc (Hons) Information Communication Technology.
2009	BEng (Hons) Electronic & Communication Engineering offered as standalone.
Early 2010s - 2020s	Significant shift: rising interest in STEM among women → female enrolment reaches ~50% in some programmes.
2016	Launch of BEng (Hons) Telecommunications Engineering with Networking.
2021	The BEng (Hons) Electrical and Electronic Engineering programme received accreditation from ECSA with interim reports submitted in 2023, and a follow-up visit in June 2024.
2023	The BEng (Hons) Telecommunications Engineering with Networking programme was granted a five-year accreditation by the IEM-EAB.
2025	Launch of the fully online MSc Renewable Energy & Smart Electrical Systems programme.

Programmes & Laboratories

PROGRAMMES OFFERED BY THE DEPARTMENT
BEng (Hons) Electrical and Electronic Engineering
BEng (Hons) Telecommunications Engineering with Networking
BEng (Hons) Mechatronics Engineering (with MPED)
MSc Renewable Energy and Smart Electrical Systems (Online)
MSc by Research
MPhil/PhD

LABORATORIES
Electronic Laboratory
Microprocessor Laboratory
Electrical Power and Machines Laboratory
Communication Laboratory

EEE Department Staff Group Photo

Seated (left to right): M.Hosany, N.Sujeebun, Y.Ramgolam, R.Ah King, V.Bassoo, R.Ramjug-Ballgobin, S.Z. Sayed Hassen, Y.Beeharry, A.Purahoo, Y.Bissessur

Standing (left to right): T.P. Fowdur, B.Rajkumarsingh, R.Jugurnauth, A.Muttea, M.Beekaroo, H.Shamachurn, I.Jahmeerbacus, V.Oree, A.Murdan, D.Cuppoor

EEE Department Staff

ACADEMIC STAFF
Prof (Dr) R T F AH KING
Assoc Prof (Dr). V D BASSOO
Dr. Y BEEHARRY
Assoc Prof (Dr) Y BISSESSUR
Assoc Prof (Dr) T P FOWDUR
Assoc Prof (Dr) M A HOSANY
Assoc Prof (Dr) M I JAHMEERBACUS
Mr R A JUGURNAUTH
Assoc Prof (Dr) A P MURDAN
Assoc Prof (Dr) V OREE
Assoc Prof (Dr) B RAJKUMARSINGH
Assoc Prof (Dr) Y K RAMGOLAM
Dr R RAMJUG-BALLGOBIN
Assoc Prof (Dr) S Z SAYED HASSEN
Dr H SHAMACHURN

TECHNICAL STAFF
MR M BEEKAROO
MR D CUPPOOR
MR A D MUTTEA
MR A PURAHOO
MR N SUJEEBUN

Remembering our Colleague

Dr Gianeshwar Ramsawock was a distinguished academic and researcher in the Department of Electrical and Electronic Engineering at the University of Mauritius. He joined the University on 2 September 2002, received confirmation on 2 September 2003, and was awarded his PhD on 13 March 2009 for his thesis titled "Combined Channel Coding and Modulation for Future Mobile Communication Systems", supervised by Professor K. M. S. Soyjaudah.

Throughout his career, Dr Ramsawock made invaluable contributions to the Department, particularly in the areas of communications and digital systems. He mentored numerous postgraduate students, supported research activities within the faculty, and played an important role in strengthening the department's academic and research profile. His technical expertise, dedication to teaching, and willingness to guide others left a meaningful and lasting impression on both students and colleagues.

Beyond his academic accomplishments, Dr Ramsawock was known for his warm personality and enthusiasm for sports, regularly participating in local running and trail events. He is remembered with deep affection and respect for his friendly nature, jovial spirit, scholarly commitment, and unwavering service to engineering education.

Dr Gianeshwar Ramsawock passed away on 1 June 2024, leaving behind a legacy of excellence, mentorship, and inspiration. His contributions continue to enrich the department, and he remains fondly remembered by all who had the privilege of working with him.

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Academic Excellence *and* Research

Building Global Competence: Accreditation Success in Electrical & Electronic Engineering

Dr Bhimsen Rajkumarsingh
Associate Professor
Accreditation Coordinator

The Department of Electrical and Electronic Engineering, established in 1968, has consistently aimed to deliver quality education and prepare students for careers in electrical, electronic, and communication engineering. Over time, programmes have been updated to match global industry needs. Key milestones include the accreditation of the BEng (Hons) Electrical and Electronic Engineering and BEng (Hons) Electronic and Communication Engineering in 2013, followed by newer programmes such as Telecommunication Engineering with Networking (2019) and Mechatronics Engineering (2020).

To ensure global recognition, accreditation is carried out through the Engineering Council of South Africa (ECSA), a Washington Accord signatory. This transition shifted programmes from performance-based to outcome-based learning, emphasizing planning, mid-course evaluations, and graduate competencies. The system ensures coverage of mathematical sciences, natural sciences, engineering sciences, design, and complementary studies, while fostering sustainability and quality teaching.

Students develop essential skills in problem-solving, design, research, technical communication, teamwork, ethics, and sustainability. Their training culminates in group design projects and individual final-year projects, reinforcing both technical expertise and professional responsibility.

The Faculty of Engineering, one of Mauritius' leading institutions since 1976, graduates about 200 engineers annually. Programmes are recognized by the Council of Registered Professional Engineers (CRPE). In 2016, programmes were revised to meet International Engineering Alliance and ECSA standards.

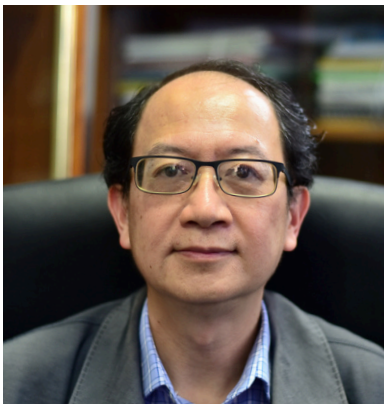
Following the 2023 accreditation visit by the IEM-EAB, the BEng Telecommunication Engineering with Networking programme was granted a five-year accreditation, with no deficiencies identified in the programme.

ECSA accreditation visits were held in 2021, with interim reports in 2023, and a follow-up visit in June 2024. The outcome confirmed continued accreditation of the BEng (Hons) Electrical and Electronic Engineering until the next cycle. The process also strengthened moderation practices, academic oversight, and laboratory facilities, which now include upgraded equipment in Power and Machines, Electronics, Microprocessors, Instrumentation and Control, and Communication labs.

In addition, academics from the department have actively contributed to external accreditation exercises, such as the EAB Desktop Evaluation 2024 of VIT (Mauritius) Engineering Programmes and the regular accreditation of UTM programmes in 2023. This highlights the faculty's broader role in promoting quality assurance in higher education beyond the University of Mauritius.

Overall, accreditation has reinforced international recognition, quality assurance, and global mobility for Mauritian engineers.

Almost a Decade of ELECOM Conferences by the EEE Department



First Edition - Year 2016

The Department of Electrical and Electronic Engineering organised the first International Conference on Emerging Trends in Electrical, Electronic and Communications Engineering (ELECOM) from 25–27 November 2016 at Voila Bagatelle, Mauritius. ELECOM brings together industry experts, academics, and government representatives to exchange ideas in electrical, electronic, communication engineering, and computing.

The inaugural edition featured three keynote speakers: Professor Michael Faulkner (Victoria University) on 5G mmWave technologies; Professor Miloud Bessafi (University of Réunion) on high-resolution solar radiation mapping; and Professor Krishna K. Busawon (Northumbria University) on chaos-based communication systems.

A total of 27 technical papers were presented, covering emerging and impactful areas such as renewable energy, power systems, mobile communications, security, IoT, smart grids, photovoltaic systems, wireless power transfer, signal processing, and 4G/5G technologies.

Prof. (Dr.) Robert T. F. Ah King

Professor

General Chair, ELECOM Conference (2016-2024)

Second Edition - Year 2018

The Department of Electrical and Electronic Engineering organised the second edition of the ELECOM Conference (ELECOM 2018) from 28–30 November 2018 at Maritim Crystals Beach Hotel, Belle Mare. The event featured keynote talks by Prof. Saeid Sanei on multitask cooperative networks and Prof. Nikola Djuric on EMF monitoring using wireless sensor networks.

ELECOM 2018 also included a workshop on Systems Engineering led by Prof. Beatrys Lacquet and her team from the University of the Witwatersrand, and a keynote address by Stuart Michie (ABB, South Africa) on digitalisation and sustainability.

A total of 38 technical papers were presented across the conference's three themes: Electrical Engineering, Communications Engineering, and Computing & Information Technology.

Third Edition - Year 2020

Despite the challenges of the COVID-19 pandemic, the Department successfully organised the third edition of the ELECOM Conference (ELECOM 2020) from 25–27 November 2020, held entirely online. Keynote addresses were delivered by Prof. Nikola Djuric (University of Novi Sad) on service-based EMF monitoring using wireless sensor networks and Prof. Keshav Dahal (University of the West of Scotland) on power system scheduling for smart cities.

A total of 41 papers were presented across four tracks: Emerging Trends in Electrical Engineering, Electronic Engineering, Communications Engineering, and Computing/IT.

Fourth Edition - Year 2022

The fourth edition of the ELECOM Conference (ELECOM 2022) was held from 22–24 November 2022 at The Ravenala Attitude, Balaclava. The event featured four keynote speeches by Prof. Maryline Chetto (Nantes Université) on power management and real-time computing in energy harvesting IoT systems; Prof. Dejan Vukobratovic (University of Novi Sad) on 5G networks for massive IoT and smart grids; Prof. Vladan Pantovic (Union University–Nikola Tesla) on emerging trends in engineering project management; and Ms. Mreedula Mungra (MARENA) on energy transition, policy, and circular economy perspectives in Mauritius.
A total of 35 papers were presented across four tracks, and the conference also hosted the first International IEEE EDAPS Mini-Workshop on Emerging Trends in Semiconductor IC Packaging.

Fifth Edition - Year 2024

The Fifth Edition of ELECOM Conference (ELECOM 2024) was held from 20 to 22 November 2024 in virtual mode. This conference has keynote speeches by Distinguished Professor Anil Jain, Michigan State University, USA on Biometric Recognition: How do I Know Who You are? and Professor (Dr) Boris Dumnic, University of Novi Sad, Serbia on Advanced Control Strategies for Wave Energy Conversion System. It also hosted a Special Session on Contemporary Applications of Artificial Intelligence in Wireless Communications by Dr Mobayode Akinsolu from Wrexham University, UK. A total of 34 papers were presented in four tracks at the conference.

The proceedings of first and second editions of the ELECOM Conferences have been published by Springer in the Lecture Notes in Electrical Engineering (LNEE) series while the Institute of Electrical and Electronics Engineers (IEEE) have published the proceedings of the conference since the third edition in 2020 to the fifth edition in 2024.

Conference organisation has only been possible with the help and support of each and every member of the organising committee and in this case the Department of Electrical and Electronic Engineering. This is an opportunity to showcase research work in the fields and gather people from all over the world with common interests on a regular basis. The department looks forward to the successful continuation of the ELECOM conferences.

Innovative Solar Energy Laboratory (iSOL)

Dr Yatindra Ramgolam
Associate Professor

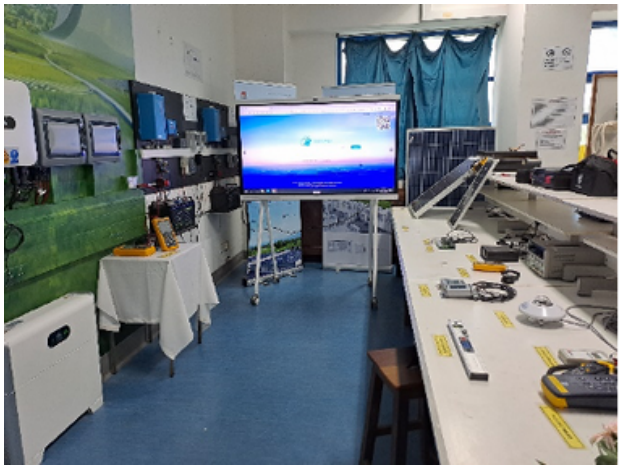
As countries, including Mauritius, are planning ahead for economic recovery, increasing the use of Renewable Energy (RE) is being prioritized to meet energy demand, drive employment opportunities and meet climate targets. The Government of Mauritius has taken the commitment to meet 60% of the country's need in energy with green sources by 2030 with solar photovoltaic (PV) as a key technology contributing to the decarbonization process. This has created employment opportunities and capacity gaps must be addressed throughout the supply chain.

An Innovative Solar Energy Laboratory (i-SOL) has been developed at the Electrical and Electronic Engineering Department of the Faculty of Engineering. i-SOL contains state of the art grid-connected, off-grid and hybrid PV kits and research grade measurement infrastructure. The kits and data are accessible via online platforms and may be remotely accessed from anywhere across the globe.

This laboratory forms part of a long term project "Park of Excellence in Solar PV (PESP)" at UoM.

PESP is a long term project that will make the University of Mauritius a global reference in terms of clean electricity use, develop capabilities and experts to support photovoltaic (PV) education, research, innovation and development (E,R,I&D) and hence contributes towards economic and societal development locally and internationally. The Unveiling Ceremony of the Innovative Solar Energy Laboratory was held on Thursday 23 February 2023 in ELT2. The event was graced by:

- Professor Sanjeev K Sobhee, Vice Chancellor, University of Mauritius
- Mr Zheng Kui, CEO Huawei Mauritius □
- Mr Peiyi Ding, Chargé d'Affaires, Chinese Embassy
- Hon. Georges Pierre Lesjongard, Minister of Energy and Public Utilities
- Honourable Mrs Leela Devi DOOKUN-LUCHOOMUN, Vice-Prime Minister, Minister of Education, Tertiary Education, Science and Technology.



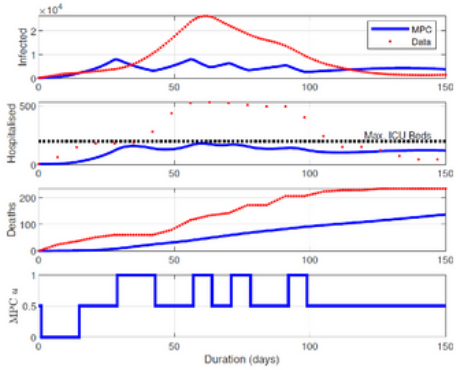
At the level of the Electrical and Electronic Engineering Department, the BEng (Hons) Electrical and Electronic Engineering programme has been formulated to build competences of graduates such that they may integrate the Renewable Energy (RE) value chain and contribute to the development of the sector locally. Students of EEE pride themselves of high-quality education in the field of PV and Solar Energy using the available facility. In addition, a number of technical short courses are offered by the department in i-SOL to address the skill gaps in the field of Photovoltaics (PV). More than 800 people from the industry have already been trained till date using the facilities of the i-SOL.

The University of Mauritius wishes to express its sincere appreciation to the United Nations Development Programme (UNDP), Huawei (Mauritius) Ltd, and the EDU-ABCM Project co-funded by the Erasmus+ Programme for their financial support in the procurement of state-of-the-art equipment for the establishment of the i-SOL. This invaluable support has significantly enhanced the University's capacity for advanced teaching, research, and innovation in Photovoltaic energy technologies. The laboratory will serve as a hub for skills development, applied research, and industry collaboration, contributing meaningfully to sustainable energy development, capacity building, and the advancement of a low-carbon future in Mauritius and the wider region. The virtual facility of i-SOL will soon be launched over the website: https://solar-web2.onrender.com/.

For more information on i-SOL, please reach out to Assoc. Prof. (Dr) Yatindra Kumar Ramgolam (y.ramgolam@uom.ac.mu or 4037865)

Reflections on a Sabbatical at ETH Zurich: Advancing Research in Data-Driven Control

Dr. S Z Sayed Hassen
Associate Professor



During 2024, I had the opportunity to spend a sabbatical at ETH Zurich, one of the world's leading institutions in science and engineering. My host was the Automatic Control Laboratory (IfA) within the Department of Information Technology and Electrical Engineering, a research group internationally recognized for its contributions to systems and control.

The Automatic Control Lab provided a setting where rigorous theoretical work is continually tested against challenging applications. The atmosphere of openness and exchange was particularly enriching: weekly seminars, project discussions, and informal interactions with doctoral researchers and faculty created fertile ground for reflection and growth.

My research during the sabbatical focused on Data-Driven Control, a field that bypasses the need for detailed system models by constructing controllers directly from experimental data. Immersed in the IfA environment, I was able to deepen my understanding of the theoretical foundations of data-driven methods while also exploring their practical limitations and opportunities.

This work culminated in the publication and presentation of "A Data-Driven Model Predictive Controller to Manage Epidemics: The Case of SARS-CoV-2 in Mauritius" at the European Control Conference (ECC 2025), see https://doi.org/10.48550/arXiv.2507.01996. The study illustrated how control-theoretic approaches can be extended beyond engineering to address societal challenges, in this case through epidemic management.

The sabbatical was also a period of intellectual renewal. It afforded time to reassess the trajectory of my research, to establish new collaborations, and to consider how recent advances can be integrated into my teaching. The insights gained will inform the way I present modern control methods to students, ensuring that they are exposed not only to established theory but also to emerging paradigms that are shaping the future of the field.

In retrospect, the year at ETH Zurich was a valuable juncture in my academic journey. It strengthened my research, expanded my scholarly network, and provided perspectives that will continue to influence my work for years to come.

UoM at 60: Forging the Future Through Industry Collaboration with Huawei Mauritius

Dr Anshu Prakash Murdan
Associate Professor

As the University of Mauritius proudly celebrates its 60th Anniversary, it is fitting to reflect on the partnerships that have propelled the institution into the forefront of technological education and innovation. Amongst its many collaborators, Huawei Mauritius has been one of the most impactful industry partners, making significant contributions to the Department of Electrical and Electronic Engineering (EEE) and positioning the University as a regional hub for ICT talent.

The Beginning of a Remarkable Collaboration

In 2017, the University of Mauritius became part of the Huawei ICT Academy, an important milestone that formalised a strong academic-industry partnership. This collaboration aimed to bridge the gap between classroom learning and industry needs, ensuring that UoM graduates are equipped not only with theoretical knowledge but also with practical skills relevant to the fast-evolving digital economy.

Seeds for the Future – Shaping Global ICT Leaders

One of the flagship initiatives has been the Seeds for the Future program, launched in Mauritius in 2017. Each year, top-performing UoM students are selected to participate in this immersive program. It includes technical training on cutting-edge technologies such as 5G, Artificial Intelligence, Cloud Computing and Cybersecurity, as well as vibrant cross-cultural exchanges with counterparts from across the globe.

From 2017 onwards, UoM students have embarked on eye-opening journeys through Seeds for the Future, attending training at Huawei's regional hubs and at its global headquarters in China. Participants often highlight not only the depth of technical learning but also the intercultural experiences as invaluable to their personal and professional growth. For many, this program has been the first stepping stone toward international careers, aligning perfectly with UoM's mission of nurturing globally competent graduates.

Outstanding Achievements in the Huawei ICT Competition

Another area where UoM has shone on the global stage is the Huawei ICT Competition. UoM students have distinguished themselves time and again, advancing from national to regional and ultimately global finals. In 2019, the Mauritian team secured third place in the regional final, a landmark achievement that highlighted the university's growing ICT talent base. Just a year later, in 2020, Mauritius — represented by UoM students — achieved a historic milestone by winning First Prize in the Global Finals, competing successfully against the best teams from across Asia, Europe, and Africa.

For UoM students, the benefits are immense — from gaining globally recognised ICT certifications to accessing mentorship from Huawei engineers and academic trainers. For the University, this collaboration reinforces its identity as a forward-looking, industry-connected institution that equips graduates not only for the Mauritian economy but also for opportunities abroad.

Looking Back, Looking Forward

Reflecting on six decades of academic excellence, the University of Mauritius can take pride in its long-standing ability to engage productively with industry to create pathways for student success. The partnership with Huawei Mauritius since 2017 exemplifies this strength. By aligning learning with global ICT trends, exposing students to top-tier competitions, and providing immersive industry experiences, Huawei has played a central role in transforming the student experience at EEE and beyond.

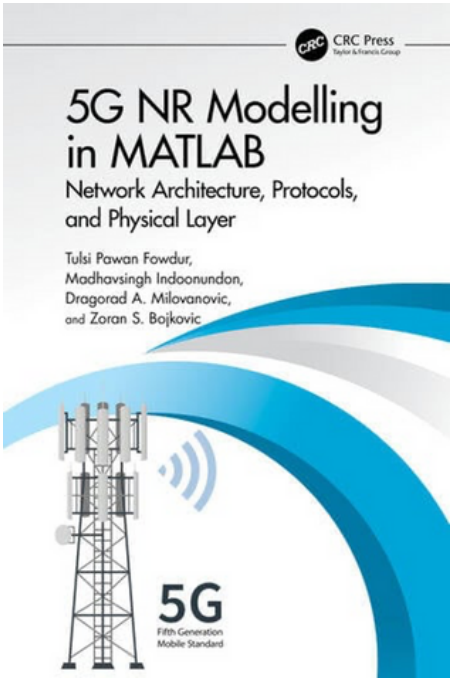
As UoM looks ahead to the next decade and beyond, collaborations like these will continue to define its ability to remain relevant, dynamic, and globally connected. The journey with Huawei Mauritius is more than just a partnership; it is an investment in the future of Mauritian youth, in technological innovation, and in the ideals of academic-industry synergy.

At 60, UoM proudly recognises Huawei as a committed partner in its journey — a global technology leader that has stood shoulder-to-shoulder with the University in shaping the ICT leaders of tomorrow.

5G NR Book Featured in MATLAB Book Programme

Dr Tulsi Pawan Fowdur
Associate Professor

"I have been conducting research in the field of Telecommunications Engineering for over 20 years and Matlab has been one of the most powerful modelling software that I have been using. I have always been fascinated by books on Mobile communications which have used Matlab as a modeling and simulation tool. This has motivated me to come up with my own book on 5G NR Modelling in Matlab with the support of my co-authors. It is really encouraging that this book been included in the Matlab's book programme."



Overview of the book

5G is the fifth generation of wireless technology and NR stands for a new radio interface and radio access technology for cellular networks, i.e., a physical connection method for radio-based communication. It is a powerful platform that supports a wide range of services that includes enhanced mobile broadband, massive machine-type communication and ultra-reliability, and low latency covering several vertical industries such as e-health, transportation, energy, media, and factory automation. This book provides a detailed description of the fundamental aspects of 5G. It gives an in-depth coverage of the network architecture of 5G by considering both the network reference point architecture and the service-based architecture. It also describes all the user and control plane protocols including the standalone and nonstandalone architecture options.

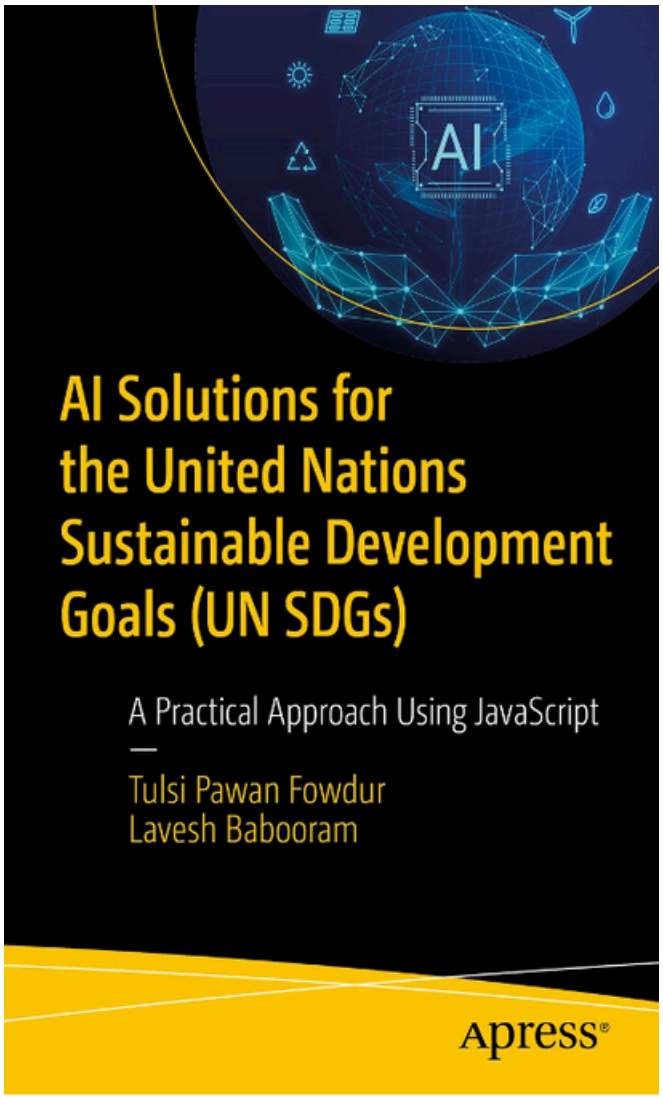
The radio access technologies such as the waveforms used in 5G, the multiaccess and duplexing techniques as well as the resource allocation schemes are treated in detail. Additionally, the physical layer signal processing blocks of 5G NR are covered in depth with elaborate numerical examples to illustrate the functioning of each block in the 5G downlink transmitter and receiver chain. The main originality of this book is the detailed illustration of the 5G NR preprocessing steps as well as MATLAB® simulation models with explanations of the codes to allow for a seamless understanding of the principles. In general, this book is meant for anyone with a basic engineering background who would be interested in acquiring a solid foundation in the fundamental concepts of 5G NR.

AI and the UN SDGs: A Collaborative Publication by Dr Fowdur and His Students

Dr Tulsi Pawan Fowdur
Associate Professor

I am very pleased to have edited this book with the support of Mr Lavesh Babooram who is an MSc by Applied Research student at the department of EEE. I have also guided 18 students of the B.Eng(Hons) Telecommunications Engineering with Networking Programme (Cohort 2019) to write five chapters in this book. The book has been published by Apress (https://www.apress.com/gp/about), a Springer Nature company.

Mr. Lavesh Babooram



Overview of the book

Learn about the United Nations Sustainable Development Goals (UN SDGs) and explore how machine learning can play a transformative role in achieving them. This book provides both the theoretical foundation and practical experience needed to understand and develop machine learning–based applications addressing multiple SDGs using JavaScript.

The book begins by outlining the various UN SDG targets and reviewing notable examples where machine learning has successfully addressed real-world challenges aligned with these goals. It then offers clear explanations of key machine learning concepts for prediction and classification, along with step-by-step guidance on their implementation in JavaScript and HTML.

A series of detailed case studies investigates challenges in renewable energy, agriculture, food production, health, environment, climate change, water quality, air quality, and telecommunications—each linked to specific SDGs. Every case study includes background literature, datasets, selected machine learning algorithms, programming concepts, and thorough explanations of the JavaScript and HTML code used to build web-based machine learning applications. The results are carefully analyzed and discussed, highlighting the significant contribution of machine learning toward advancing the SDGs.

By the end of the book, readers will gain a solid understanding of the SDGs and practical insights into applying machine learning to address a wide range of sustainability challenges.

Chapters

Chapter 1: Introduction to Machine Learning Applications Development and the UN SDGs, Tulsi Pawan Fowdur, Lavesh Babooram
Chapter 2: Utilizing Machine Learning Algorithms for Power Generation Prediction and Classification in Wind Farms, Dobee Lalitesh, Kurmally Mohammad Adnaan, Luchmunparsad Gyaneeta, Sanghan Ashven
Chapter 3: A Crop Recommendation System Using Machine Learning Algorithms for Achieving SDGs 2, 9, and 12, Domah Avishaye, Hanumunthadu Vandana and Radjoo Dheeraj
Chapter 4: Aligning Manufacturing Emissions with SDGs 9 and 13 Using Machine Learning Algorithms, Mohadeb Sai Maadhavee, Radhakeesoon Aishani, and Seeballack Oushna
Chapter 5: Potability Analysis of Water Using Machine Learning, Ramdin Diteesha, Ramjansing Roshwar, Soodhoo Leena
Chapter 6: Air Quality Monitoring: A Case Study for the Application of Machine Learning in Meeting SDGs 3 and 13, Aunowar Farhaan Mohammad Jeelany, Munisamy Sodiyen, Ragoo Navish Kumar, Kwok Hin John Darren Johsua, Hawseea Mohammed Fayez and Appadoo Sarvesh Sanjeevi
Chapter 7: Clustering the Development of Worldwide Internet Connectivity for SDGs 7, 9, and 11, Tulsi Pawan Fowdur, Lavesh Babooram

B.Eng(Hons) Telecommunications Engineering with Networking Students (Cohort 2019)

03

Student Experience

My Journey as an International Student

Sinothando Ntsaluba - South Africa
BEng (Hons) Electrical and Electronic Engineering - Level 1

Becoming part of the Department of Electrical and Electronic Engineering as an international student has been both an exciting and transformative experience. From the very beginning, the transition into a new country and academic environment was made smoother thanks to the unwavering support of the Admissions office, Registry office, and Examinations office. Each time I encountered a challenge, they were quick to provide assistance, ensuring I always felt guided and supported.

The academic side of my journey has been equally fulfilling. The lecturers and tutors within the department have consistently demonstrated commitment, patience, and encouragement. Their approachable nature and passion for teaching have created an engaging environment that has not only strengthened my technical skills but also nurtured confidence in my abilities. Learning here has been rigorous, but it has also been deeply rewarding.

I would especially like to express my gratitude to the following people who have been pivotal to my integration and growth since my arrival in Mauritius. The Dean of the Faculty of Engineering has provided thoughtful guidance that has shaped both my perspective and ambitions. The Head of Department has offered steady direction and encouragement throughout my studies. The Programme Coordinator for Electrical & Electronic Engineering has also ensured I always felt supported, addressing challenges with practical solutions that made my journey far less daunting.

Reflecting on my time here, I recognize how much this department has contributed not only to my academic development but also to my personal growth. I have learned resilience, adaptability, and the value of community. These experiences will remain foundational as I look toward the future and aspire to contribute meaningfully to the field of electrical and electronic engineering.

Experiences and Insights from an International Student

Maze Ivainashe Muzorori - Zimbabwe

BEng (Hons) Electrical and Electronic Engineering - Level 2

My name is Maze Ivainashe Muzorori, and I was born in Harare, the capital city of Zimbabwe. I come from a family of eight and am the fifth child. Choosing to study at the University of Mauritius in the Department of Electrical and Electronic Engineering has been one of the most rewarding decisions of my academic journey so far.

Although adapting to a new country and environment came with a few challenges, I was fortunate to meet warm colleagues and supportive lecturers who helped make the transition much easier. The friendships and professional relationships I have built here have played a significant role in my growth and contributed to a strong sense of belonging throughout my studies.

One of the most memorable aspects of my time in the department has been the opportunity to apply what I have learned in real-world industrial settings. During the most recent vacation period, I secured an internship at Manser Saxon, one of the leading engineering and construction companies in Mauritius. Working in the Extra Low Voltage (ELV) Department provided valuable hands-on exposure to advanced systems and technologies, particularly in the field of IoT. This experience not only enhanced my technical and professional skills but also reinforced my passion for electrical and electronic engineering.

Looking ahead, my future aspirations are closely aligned with the evolution of electric vehicles. I am deeply interested in research aimed at improving efficiency, increasing range, and reducing charging time to make electric mobility more practical and widely accessible. I believe sustainable transportation represents one of the defining challenges of our generation, and I am motivated to contribute towards innovative solutions in this space.

My journey at the University of Mauritius has strengthened both my academic foundation and my vision for the future. The supportive and inspiring environment within the EEE Department has been instrumental in my personal and professional development, and I remain grateful to be part of a community that nurtures excellence, curiosity, and innovation.

Becoming a Telecommunications Engineer: My Academic Journey

Mohammad Ally Hassen Seegoolam

BEng (Hons) Telecommunications Engineering - Year 3

My journey in the EEE Department has been one of immense intellectual and personal growth. The department's culture has fostered curiosity, hands-on learning, and a drive for improvement. Surrounded by supportive lecturers, motivated peers, and an environment that encourages innovation, I have strengthened my technical foundations and deepened my enthusiasm for becoming a telecommunications engineer.

Through modules in programming, telecommunications systems, electronics, networking, mathematics, and engineering design, I developed stronger analytical thinking and greater confidence in tackling complex engineering concepts. These courses pushed me to apply theory to real-world problems and work effectively in teams. One of the most memorable experiences was the SmartBin project, where my team and I built both the working prototype and its software applications. Facing real engineering challenges—from design to implementation—enhanced my problem-solving abilities and sparked my interest in practical, technology-driven solutions.

Departmental seminars and webinars on 5G, satellite systems, SDGs, and deep learning further broadened my understanding of emerging technologies.

Beyond academics, I actively sought opportunities for personal development. Participating in hackathons taught me to work under pressure, learn new technologies quickly, and improve teamwork and communication skills. Serving in the IEEE UoM Student Branch has also been transformative; as a member, event organiser, and now Vice Chair, I have gained leadership experience, collaborated with diverse groups, and developed a strong sense of responsibility.

Being a Student Mentor—and later Head Mentor—for BEng Telecommunications Engineering students allowed me to give back to the community that supported me. Guiding new students through their integration and supporting them throughout their academic journey was deeply rewarding and helped strengthen my interpersonal and organisational skills.

As I move forward, I look forward to new projects, research opportunities, and collaborative work that will continue to build my capabilities and prepare me for a future in telecommunications. I am grateful for the experience so far and excited for what lies ahead.

My Research Journey

Madhavsingh Indoonundon

Recent PhD Graduate

Madhavsingh Indoonundon graduated with first-class honours, earning a BEng (Hons) Electronics and Communications Engineering degree from the University of Mauritius in 2017. He was honoured with a Gold medal for presenting the top degree project at the Faculty of Engineering that same year. He has pursued his PhD in Telecommunications Engineering at the University of Mauritius, supported by a scholarship from the Higher Education Commission of Mauritius. His research interests lie in channel coding, mobile communications and artificial intelligence. Alongside his academic pursuits, he has been actively engaged as an engineer in the telecommunications industry since 2017, acquiring expertise in Radio Access Networks, IP-based networks and network automation frameworks.

My research journey began with my final year project for my bachelor's degree at the UOM. The thrill that comes with working on projects which address real-world engineering problems and publishing works which get read by the research community helped me develop a deep passion for research. So, when it was finally time to opt for a post-graduate program after working for two years in the telecommunications industry, it was clear to me that I needed a research-based programme such as an MPhil/PhD degree. Due to its relevance at that time and my experience during my final year project, I opted to base my MPhil/PhD research on Channel Coding in 5G New Radio.

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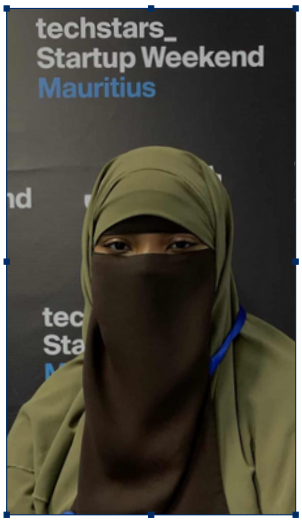
Completing a PhD degree with a dozen publications is definitely a highlight in my life, but it is the journey filled with extraordinary achievements alongside of my brilliant and supporting supervisor that I will always cherish.

Our Students Speak

" The EEE Department has been instrumental in shaping my journey in telecommunications, providing strong guidance, practical exposure, and the support needed to grow both academically and professionally. "

Dhruv Veeraj Kumar Gunassee
BEng (Hons) Telecommunications Engineering - Year 2



"This course reminded me that growth comes from pushing through difficulty, not avoiding it."

Alexia Jolicoeur
BEng (Hons) Electrical and Electronic Engineering - Year 1

"My time in the department has significantly shaped both my personal and academic development. The knowledge gained and the skills acquired have fuleled my drive to excel and push forward in this field."

Lavkeshduth Babooram
BEng (Hons) Electrical and Electronic Engineering - Year 2

"The EEE Department has been central to my development, providing the technical foundation, practical experience, and support that shaped my path in telecommunications."

Danish Busgeeth
BEng (Hons) Telecommunications Engineering - Year 3

"The curriculum aligns with Industry 4.0, providing a strong foundation in smart manufacturing and robotics. My course combines control systems and electronic intelligence to optimise mechanical operations."

Preetysha Nuthoo
BEng (Hons) Mechatronics Engineering - Year 2

Guided by the EEE department, I'm developing a more analytical mindset, a purposeful approach to problem-solving, and a growing sense of creativity.

Mithali Lakshmi Beeharry
BEng (Hons) Telecommunications Engineering - Year 1

04

Alumni Stories and Global Impact

From Student to Staff – Perspective of an Alumnus

Dr Heman Shamachurn

Dr Heman Shamachurn holds a B.Eng. (Hons) degree in Electrical and Electronic Engineering from the University of Mauritius, an MSc degree in Renewable Energy Systems Technology from the Loughborough University, UK, and a PhD in Modeling and Control from the University of Mauritius. He is currently an academic staff in the Department of Electrical and Electronic Engineering.

I joined the department as a student in 2006, and I graduated in 2010. My journey as a student has been enriching academically, professionally as well as personally. The different subjects covered everything needed to embark on a professional engineering pathway. I was exposed to all the essential skills including professional communication, electrical and electronic engineering, project management, accounting and finance, and industrial training. Those attributes, along with the job-specific training, enabled me and my former classmates to secure jobs in various multidisciplinary fields including engineering, academia, accounting and finance, flying, regulatory authorities and others. I later embarked on an MSc course in the UK, and faced no adaptation issues, owing to my undergraduate experience. I acquired some professional experience in the vertical transportation, wind and solar energy sectors, and this was achieved without any hassle, as my undergraduate training enabled me to cope with the working environment with minimal difficulty. Along that line, I confirm that the various courses offered by the department have been well designed to train one towards becoming a responsible and competent engineer or technologist.

I joined the department as a full-time academic staff in 2013, as I was interested to pursue a career in teaching and research in renewable energy systems, energy efficiency, and modeling and control. My job gave me an opportunity to complete a PhD alongside my duties of teaching, research and consultancy. I can again confirm, as a postgraduate alumnus, that the support of the department and the University has always been there, whether be it through funding schemes or through possibilities of better time management. Not to say so, many of my previous lecturers have now become my colleagues. Every time I enter a classroom, I always recall the experience I had when I sat at those same benches as a student. Without any doubt, there has been an improvement in the quality of our courses over the years, to cater for the demand of the industry and the rapidly evolving fields of renewable energy and telecommunications engineering. The COVID-19 brought a significant change in the way courses are run, by allowing for more online sessions, without any compromise in the education quality. Moreover, the offered courses are now accredited, and can provide the students with limitless opportunities.

I feel really proud to work for the same department which has had a great contribution to make me who I am today.

How my University Years at UoM Forged my Engineering Career

Jerome Louis

BEng(Hons) MTelEng(Melb) CEng MIET MIEEE

Information and Communication Technologies Authority
Mauritius

I graduated from the University of Mauritius 24 years ago with a BEng(Hons) Electronics and Communications Engineering. After all these years, I am confident to say that my years at the UOM – particularly within the Department of Electrical and Electronic Engineering (DEEE), have shaped my career in an unprecedented way.

I wish to express my sincere gratitude to the DEEE for giving me the opportunity to share my story which I hope may inspire younger generations to persevere in their studies and careers.

When I joined UOM in 1997, Internet access was still on dial-up and making its way slowly to homes and businesses. Mobile phones were rare – I did not own one until 2003. They had dull black-and-white screens only offering limited entertainment like Snake game. Colour screens, cameras, YouTube or social media were still unimaginable dreams.

It is humbling to realize that I have been able to contribute, albeit modestly, to the telecommunication revolution that has transformed the way we learn, work, play and connect with one another. At the same time, I am increasingly becoming awareof the need for ethical use of technology and urgent need of embedding ethics by design.

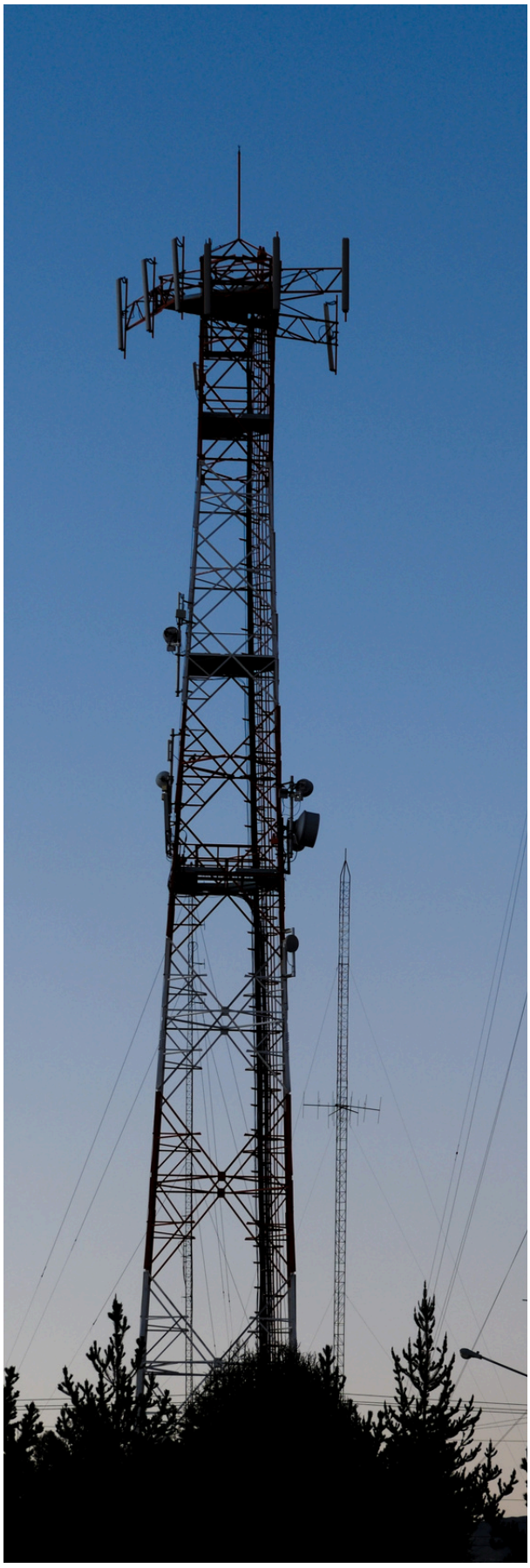
After completing my A-Levels, I was told that that telecommunications would soon boom as countries around the world were liberalizing their telecommunication sector. Mauritius was set to follow the trend with the signature of the WTO-GATS agreement in 1998. I must admit that I knew little about Engineering at that time. It is following the encouragement of my Physics teacher, that I researched and got convinced that this was the right path for me.

The education I received at DEEE was of excellent quality, I thoroughly enjoyed most courses and remain grateful to the dedicated lecturers who guided my cohort through those four years.

I was able to verify the strength of my UOM education when I pursued my Master's degree at the University of Melbourne, Australia. I realized that I was able to perform on par with students from all parts of the world. That moment filled me with pride in my alma mater.

My studies allowed me to pursue a career at the ICT regulator in Mauritius where I joined as a trainee Engineer and gradually rose to the position of Director of Engineering. The education received at UOM has been instrumental in my contribution to the liberalisation and development of the ICT sector in Mauritius. The management of the radio spectrum has since been one of the fields for which I have developed a real passion. I have also had the privilege of representing Mauritius on international fora including at the International Telecommunicaction Union (ITU) where the future of technology is shaped.

" To the new generation of students, I want to say that your years at the University of Mauritius will not only provide you with the knowledge to build your career, but also the skills and tools to nurture your imagination so that you may shape a meaningful world for the future—one that serves both humanity and truth. As Albert Einstein reminded us, "Imagination is more important than knowledge," and as C.S. Lewis wisely added, "Reason is the natural organ of truth; but imagination is the organ of meaning." May your journey at UoM empower you to unite both truth and meaning in all that you do."



Building a Career in Wind Energy — A Path That Began at UoM

Heather Hurree
Principal Wind Engineer, Lightsource bp Australia

My four years spent at the University of Mauritius has been a cornerstone of both my personal and professional development. I studied Mechatronics Engineering back at a time where entering the STEM field was not actively encouraged due to a low gender balance. I still remember my first day of orientation, walking into a room full of guys and being the only female student. I felt completely out of my depth, not even knowing what Mechatronics Engineering was like as a field of work. I initially chose it as I thought it would offer more opportunities in the job market. Doing what? That remained to be seen at that time.

Whilst this was daunting at first, I quickly found my rhythm and was not viewed any differently from the other students. If anything, the teaching staff encouraged me to aim high, strengthening my determination to succeed. Academically, the degree fostered a multidisciplinary way of thinking. The blend of mechanical, electrical and control engineering taught me how to approach challenges from different angles - an essential skill in the Industries of Electricity Generation and Renewable Energy. The hours spent on lab work, group projects and coding challenges at UoM laid the groundwork to my critical thinking and analytical problem-solving abilities.

Equally important, my time at UoM also came with a number of personal lessons learned outside of the lecture theatres. I learnt that engineering is not just the technical knowledge, it's about curiosity to start with and a drive to keep learning new things and improving oneself through perseverance.

Looking back, my time at UoM wasn't just an academic journey, it was where I discovered my purpose and my confidence to really pursue a career in STEM. Professionally, the engineering background acquired at UoM gave me a rock-solid platform to build a career in wind energy.

Upon finishing my bachelor degree, I set my sights on further studies and completed two Master Degrees (Engineering Project Management and Developing Technologies) from the University of Melbourne. I was fortunate enough to land my first job shortly after that in wind energy, in a technical advisory role covering the Australian market.

The past 17 years have been pretty busy for me! I had the opportunity to work on a range of wind projects in various stages of development and operations in numerous countries. Other than in Australia, I've had the opportunity to work on greenfield and operational wind farms in India, Southeast Asia, New Zealand and both in North and South America. I have been fortunate in my career to have been involved in so many projects, and most importantly learning from them.

My time at the university has instilled a desire to work on projects with real-life impacts - driving the global transition to clean energy. It taught me how to connect innovation with sustainability and gave me the confidence to pursue a path that merges engineering excellence with environmental responsibility.

Where It All Started: My Journey in Advanced Networking & Cybersecurity

Yannick Rioux
Security Architect, Capgemini Engineering France

Technology has always fascinated me. That passion naturally led me to pursue a BSc in Electronics and Computer Science from the Department of Electrical and Electronic Engineering at the University of Mauritius, where I graduated in 2007. During my studies, I developed a strong interest in networking, which led me to complete my CCNA training at the University of Mauritius Cisco Networking Academy.

This experience strengthened my technical foundation and marked the beginning of my journey into connectivity and cybersecurity.
Beyond academics, my time at UoM was filled with unforgettable moments—long commutes, group study sessions, and collaborative learning where we pulled each other up, shared knowledge, and solved problems together. These experiences not only deepened my academic knowledge but also taught me the value of teamwork and mutual support.

During my career I have had the opportunity to contribute to the design and the security of complex network infrastructures on a global scale. I have also worked in an R&D team to develop 5G security use cases for an Extended Detection and Response (XDR) solution.

Thanks to the strong grounding I received during my university years, transitioning into the industry was seamless. The blend of electronics and computer science, along with early exposure to networking through the CCNA training, laid a solid foundation for my career. Over the years, I've had the opportunity to work with leading organizations such as Nokia, Orange Business Services, Mauritius Telecom, and now Capgemini Engineering, where I am currently working as a Security Architect.

"To current students and recent graduates: embrace every challenge, stay curious, and trust in the power of foundational learning. The University of Mauritius gave me more than a degree—it gave me direction, resilience, and a lifelong network. For that, I remain deeply grateful.

I am proud to be an alumnus of the Department of Electrical and Electronic Engineering at the University of Mauritius."

"Do the best you can and never stop." — Stephen Wiltshire

From UoM to Global Sustainability Leadership: A Journey of Growth

Niraj Boodhoo

B.Eng (Hons), PGDip, ACIBSE, RPEM, LEED AP, EDGE Expert and Auditor, LEED Green Rater, BRI Verifier, TRUE Advisor

Director, Prodesign Engineering Consultants Ltd

I always felt fortunate when I joined the University of Mauritius and enrolled in the BEng (Hons) Mechatronics programme in 1999, which had recently been launched. It was a rare opportunity at that time, providing me with exposure to three engineering departments: Mechanical, Electrical and Electronic, and Civil Engineering. That mix opened my eyes to the interconnectedness of the disciplines. It also shaped the way I think, always trying to approach problems in an integrated manner. That mindset has stayed with me and has guided my career ever since my graduation in 2004.

I believe the University taught me the basics of engineering. Still, more importantly, it taught me how to be self-motivated, a quality that has helped me throughout my professional career. The lecturers, too many to name but all of whom I remain grateful to, guided me along the way. They were well prepared, knowledgeable, and patient. They never spoon-fed us. Instead, they provided us with just enough direction to explore, question, and push ourselves further.

Looking back, I can see how much confidence they gave us. I graduated from the University motivated and eager to join the professional world and apply my skills and knowledge. With time, I came to realise that the most valuable gift was not only the technical knowledge, but also the way of thinking and learning I had developed. I still remember many of my lecturers as guides and examples, and I continue to carry their influence with me to this day.

After graduating, I started my career as a site engineer with EME Ltd, working on the Ebene Hypermarket project. It was my first authentic experience with project work, and I quickly discovered that solving problems on site was very different from solving them on paper.
In 2004, I joined Prodesign Engineering Consultants as a trainee engineer, and over the years, I have assumed various roles, rapidly expanding my abilities. I also worked to earn my registration as a professional engineer with the CRPE, served as a project engineer, and later became Director of Projects.

Today, I am proud to lead the Sustainability team. Some roles were daunting at first, but each one helped me grow in confidence and ability. Along the way, I was fortunate to contribute to several notable projects, including the refurbishment of Dr A. G. Jeetoo Hospital, the AML Corporate Office, and the refurbishment of Hilton Nairobi, which was carried out without closing the hotel.

One of my greatest joys has been working with many UoM graduates who joined Prodesign. I recognise in them the same drive and technical grounding I once had. Over the years, I have mentored several of them, supervised their training, and guided their professional registration. A moment of pride was leading a team of young UoM graduates on the LEED ND Telfair project. Together, we achieved the first LEED Neighbourhood Development certification in Africa. That was a milestone not just for us, but also proof of what UoM talent can reach globally.

Looking back, I can proudly say that UoM gave me more than a degree. It taught me perseverance and, most importantly, how to keep learning. We never stop learning, and the University provided me with the tools to research, innovate, and continually seek new solutions. For that, I remain deeply grateful.

" As the University celebrates its 60th anniversary, I feel honoured to be part of its story and delighted to see it shaping the next generation of engineers who will go even further."

From Undergraduate to PhD at EEED

Dr Sajaad Boodoo
Senior Electrical Engineer
Ministry of National Infrastructure

It all started in August 1994 at the University of Mauritius and I still the remember first lecture – Instrumentation and Signal Analysis. Thirty years later, all these moments spent at the UoM became memorable. I am now a registered professional Electrical and Electronics engineer, with about 25 years of experience.

The University of Mauritius has been determining in who I am today. In the early years, it was not possible to study abroad due to financial constraints, even if I would have liked it otherwise. However, I believe that the quality and level of the course offered at UoM is very commendable. During my career, I have been supervising trainee engineers coming from various institutions.

Moreover, I am often requested by the Council of Registered Professional Engineer (CRPE, Mauritius) to interview graduate students regarding their registration as professional engineers. Without hesitation I would say that engineering students graduating from the UOM show good understanding of the subject matter and have good theoretical background. The depth of the subjects covered at the UoM is remarkable. The BEng (Hons) EEE programme not only prepares us for the practice of engineering but also opens the door for an academic career. The variety of subjects covered in the Electrical & Electronic Engineering course during my studies has made it possible, and many of my classmates have chosen different orientations in their career.

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During my undergraduate studies (1994 -1998), student life at UoM was very demanding - load of hard work, intense pressure, and very little leisure! That's what studying engineering is all about, I guess. In those days, there was no internet, no mobile, no WhatsApp, no email… But still we managed and even planned outings during holidays. If I were to talk about my lecturers of that time, it would require more than just an article. Some have really marked our lives. We still joke amongst friends nowadays about some of their remarks during lectures. Maybe it would be hard to guess now that the old common room was once used for student End of Year party in 1994! It was then possible due to the low university population of that time. The following year though, the EoY party was held in the underground parking of the New Academic Complex.

In 2012, I was back at UoM to read for a PhD. The University had, by then, already undergone a lot of changes in terms of infrastructure. It was a bit awkward when I came to the Engineering Tower. But the joy of being a student again was rekindled. I was looking forward to working on bread boards, manipulating oscilloscopes, designing filters and programming microprocessors etc. However, doing a PhD is more of a mind challenge (I'm sure all PhD students would agree). It stretches your mental faculty to nearly the elastic limit, taking your imagination to the point of illumination. Then again, the University was there awarding me my Doctorate Degree in a span of nearly 25 years….

From Engineering Graduate to System Planning Engineer

Amurdavallee Ramasawmy
System Planning Engineer
Central Electricity Board

My journey in the Faculty of Engineering started in 2002 and I graduated from the University of Mauritius with a degree in Electrical and Electronic Engineering in 2006. I am currently working as a System Planning Engineer at the Central Electricity Board and am a Registered Professional Engineer from the Council of Registered and Professional Engineers of Mauritius.

The four years spent in the Faculty of Engineering not only helped me acquire knowledge but also provided me with a passport that has opened multiple doors. I started my career as an engineer at Compagnie Mauricienne de Textile, a leading company in the Textile Industry. Afterwards, I joined Robert Le Maire Ltd as a site electrical engineer.

In 2009, I joined the Central Electricity Board as a cadet engineer, where I received training in several departments, ranging from Power Stations to Customer Service. I spent five years in the Meter laboratory of the CEB and was involved in the implementation of the Automatic Meter Reading for CEB meters.

My current post in the System Planning section of the Corporate Planning and Research Department of the CEB includes carrying out studies to ensure that major projects, such as load demand and generation plants, can be integrated into our network. Over the last ten years, I have had the opportunity to get involved in projects that make use of new technologies like renewable PV farms and battery energy storage systems. The degree that I earned from the University of Mauritius has played a significant role in the creation of these opportunities. As a Registered Professional Electrical Engineer, I now give back to academia by sharing my years of experience in the industry with young graduates.

My degree in Electrical Engineering has not only boosted my career but has also immensely improved my personal life. Coming from a low-income family, I can only be grateful for my actual position in the CEB.

My Journey Through the Electrical & Electronic Department at UoM

Dr Ridwan Kureemun
Senior Control Systems Engineer
Caterpillar Inc, United Kingdom

My name is Ridwan Kureemun, and I currently work as a Senior Engineer at Perkins Engines Ltd (part of Caterpillar Inc.). My work focuses on the development of control systems for internal combustion engines, including air system control, emission control, and thermal management. I also specialise in optimization techniques, machine learning applications, modelling and simulation, and virtual engine calibration. After graduating from the University of Mauritius in 1997 with a degree in Electrical & Electronic Engineering, I pursued an MSc in Systems Engineering in 1999, followed by a PhD in Control Engineering in 2000 at the University of Leicester. Both programs were fully funded through scholarships.

Looking back, my journey through the Electrical & Electronic Engineering Department at the University of Mauritius has been more than a professional pursuit—it has been a deeply personal evolution. From the moment I first entered the lecture halls as a student, I experienced a profound sense of inspiration—not solely derived from the academic material, but from the pervasive atmosphere of possibility that surrounded me.

The department was a crucible of enrichment and discipline. I still remember the late nights spent on revisions, the thrill of seeing a simulation finally work, and the camaraderie built over shared challenges. These experiences didn't just shape my technical foundation—they taught me resilience, precision, and the value of collaborative problem-solving.

The Electrical & Electronic Engineering programme instilled in me a mindset of continuous learning. Whether it's adapting to emerging technologies or refining pedagogical approaches, the department's culture of excellence has kept me grounded and inspired.

One of the most defining moments of my academic life was my final-year project, where I explored intelligent control systems. It was a complex topic, but the guidance I received from my mentors and the resources provided by the department gave me the confidence to push boundaries. That project became the seed for my postgraduate research and eventually led me to pursue a PhD.

Joining Caterpillar Inc. as a professional was both humbling and empowering. I was no longer just applying knowledge—I was now part of the engine driving innovation and shaping real-world solutions. Over the years, I've had the privilege of mentoring talented colleagues and junior engineers, each bringing their own unique spark to the team. Watching them grow, take initiative, and lead impactful projects has been one of the most rewarding aspects of my career.

Today, as I contribute to research, curriculum development, and graduate mentorship, I carry with me the legacy of a department that believed in nurturing both intellect and integrity. The University of Mauritius didn't just give me a degree—it gave me a purpose.

To every aspiring engineer walking through those doors: embrace the challenges, seek out mentors, and never underestimate the power of curiosity. The journey may be demanding, but it's one that will illuminate your path for years to come.

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2025