

CURRICULAUM VITAE

NAME Dr. Yuvaraja **VisagaThilagar**, BEng (1st Class Honours, 1996), PhD (2003), FIEAust., SMIEEE, FIEAust, SMOptica, SMSPIE, SMINCOSE, CPEng, NER RPEV RPEQ, APEC Engineer, IntPE(Aus), IEA, LM-MTT-S, MAIP, MAOS, MBCS, PRINCE2® Certified, Certified System Engineering, AIM Certified courses (management & leadership). MOU Senior Member (INCOSE.org)

KEY SUMMARY

Highlights of My Extensive RF/Microwave/Radar/System Integration/EMC/EMI/RADHAZ + Photonics (in particular to Defence Application and Work) – I had delivered, prepared & presented teaching at universities and industries in these areas:

(January 2022 – Present) QinetiQ Australia, Permanent Full-time, Principal Engineer, Lead and Management role in RF Engineering

- *I am unable to provide full details due to the sensitivity and security of the project however in the area of RF and System Engineering including EMI/EMC/RADHAZ roles (Customer – Senior RF/Systems Engineer) and received an “Outstanding Team Award” by the customer. Radiation safety is a paramount importance in the projects and also to personnel using these technologies, need to understand the safety, use during the work and limits.*
- *As key lead RF Senior Engineer - I had to provide these outcomes and signoffs including approval from team Engineering director, Principal Engineer and ultimately the key stakeholders (including presenting my findings to my recommendation moving forward for their assurance).*
- **In May 2023, gain a Prestigious and Highest Engineering award as a FELLOW of the Institution of Engineers Australia (FIEAust) which was awarded at a ceremony from many other engineering disciplines and I was one of the key FELLOW in my area of competency as a Senior RF & Systems Engineer for my 28+ professional engineering work to local and global communities with my vase skillsets. This is a great and momentums award for the work that I contributed in academia, industries (commercial and defence) but also teaching youths in Primary & High School to University but all this will not come about without everyone’s support and contribution to-date. There’s in me many years to come where I will be able to contribute to the successful and building this nation, AUSTRALIA.**
- **In August, gained prestigious elevation & award as Senior Member of Optica (SMOptica) and Senior Member of SPIE (SMSPIE)**
- **In March 2023, I gained the Chartered Professional Engineer (CPEng), National Engineering Register (NER), RPEVictoria RPEQueensland, APEC Engineer, InPE(Aus), and IEA by Engineers Australia, the governing board for Professional Engineers in Australia but affiliated with many International Chartered Engineering societies (Equivalence).**
- **Global and local contribution as a Chair, Victorian IEEE Section Electron Devices & Photonics Society Joint Chapter since 2017 (with 31+ years with IEEE) and IEEE History Committee and Life-member of Microwave Theory and Techniques (provide where needed my support) and BCS chartered IT member of UK. Including providing support by peer-review global publications due to my extensive experience**

(October 2021 – December 2021) RMIT University, Fixed-term Contract, Research Fellow

- *I am unable to provide full details due to the sensitivity and security of the project however in the area of radar topologies, RF/Microwave integration/conversion & System Design and High-Speed Computing*

(July 2020 – January 2022), University of Melbourne

- *High-speed Computing with RF/Microwave + Photonics due to sensitivity and security of the project for electronic warfare applications using VPIphotonics: Simulation Software and Design Services tool (No Publications due to sensitivity of the defence project) – Had provided detail design proposal and various stages detail reports*

(April 2018 – May 2020), Applied Engineering College (AEC), Riyadh, Saudi Arabia

- *Teaching engineer courses (Analog & Digital Electronics, Power Engineering, Instrumentation Engineering, Product Design, Automated Engineering, Electrical Engineering, Project Supervision (over 40 projects)*

(Feb 2006 – June 2015), Future Fibre Technologies Pty Ltd, Melbourne, Australia

- *Roles from Senior Fibre System Engineer to Applications Engineer Manager on development of Photonic Sensors*

(July 1999 – 2006), RMIT University

<ul style="list-style-type: none"> - <i>10+ years of Design, Integrate and Manufacture a fully RF/Microwave/Photonic solution for DSTG (Formerly DSTO), Electronic Warfare Division, Edinburgh, SA which included ultra-high speed upto 40GHz with RF/Microwave Amplifier integrated into a single- integrated package.</i> - <i>Used various design and simulation tools such as Agilent (now Keysight Technologies) Advanced Design System (ADS), HP/ANSYS HFSS – 3D FEM modelling tool (Now Keysight Technologies), CST Studio, Cadence RF/Microwave Design for amplifiers, electrodes, matching-networks, integration study, fields, some antenna work including RMIT implemented 2D, 3D and System design tools</i>
<ul style="list-style-type: none"> - <i>Highly experienced in RF/Microwave device and system testing, probing circuitry, radar measurements, basic antenna measurements using 40GHz+ Network Analyser/Spectrum Analyser for S-parameters, Dynamic range, Intermodulation distortions, Signal-to-Noise, Noise and other highly required RF parameters/measurements</i>
<p>(Feb 2016) NEC Australia</p>
<ul style="list-style-type: none"> - <i>Tender preparation & documentation including review of requirements and specifications for a Large Australian Project in RF Emergency (Police, Ambulance, Fire Critical) System and Architecture Upgrade</i>
<p>(July 2006 – June 2007), Future Fibre Technologies Pty Ltd,</p>
<ul style="list-style-type: none"> - <i>Collaboration with defence on sensor technology (i.e. Technical appraisal for DoD and DSTG (Formerly DSTO))</i> - <i>Review and Technical documentation for all global market in perimeter detection products however, application for sensing in defence applications. Again, this was classified by DoD and DSTG as complete no-share or distribution of details but only 3 parties (including myself and co-manager representing Future Fibre Technologies)</i> - <i>Extensive leadership and management role where I had to provide support to the upper management on my decisions and outcomes prior to release of the product (i.e. Hardware and Software Testing including making automated testing platform to ease the production team with time.</i> - <i>Trained all customers on-site for the products that they had purchased including any field support.</i>

Other Work Experiences and Expertise

- **Research and Teaching & Learning Experience** with over 28+ years **and Teaching & Learning Delivery for over 16+ years including opportunity offered in my final year undergraduate year** and **over 11+ years of extensive industry experience** in Fibre-Optic Sensing, Microwave/RF, Fibre-optics, Optical transmission, Photonics, Electronics, Mechatronic Engineering applying electronics, mechanical engineering and integration, Material Science & Engineering, Packaging, Signal Processing and Measurement techniques & tools
- Professional & highly skilled engineer in Telecommunication, Sensing, Wireless & Product Driven applications - Strong focus, interpersonal, communication and team-oriented skills
- Self-motivated, challenge-driven, pro-active, excellent analytical & problem-solving skills, competent & honest professional engineer and will always go that extra mile to ensure success
- **System Engineering** certified by ES&C Systems Pty Ltd
- **Other Management, Leadership and Leading Team** - Success for High-value Customer Expectation, Delivery, Training, Teaching and Research part of **PRINCE2®**
- Contributed to business growth with competitive new to enhanced mature products in professional engineering practise. - Proven ability to deliver output (KPI's) within the required milestones
- Keen eye for detail in product design and testing procedures
- Understanding of international standards (i.e. technology standards) and quality processes (i.e. ISO 9001) - Strong Project, Risk and Leadership Management

MAIN EXPERTISE

- **Engineering & Applied Science (Research, Teaching & Learning and Design)** - Fibre-Optic Sensing, Signal processing, Automation, Router & Switching, Material Science, Photonic/Fibre-Optic, RF/Microwave Circuits & technologies, RF/Photonics system, Optical Modulators, RF/Photonic system integration, D- or C-WDM, RF/Optical Circulators, Analog drivers & electronics, filters, amplifiers & Matching circuits, Communication Engineering, Computing technologies, Photonic Reservoir Computing (PRC), High-Speed Electronics (HSE), Embedded Technologies, Mechatronic Applications, etc
- Telecommunication system design and integration - access networks, Hybrid Fibre Coaxial (HFC) design & testing, fibre distribution, integration, computing technologies and architecture

- Certified Systems Engineering (Optical, Electronics, Telecommunication, Microwave or Traditional Engineering)
- **Senior Consultant** on Electrical/Electronic/Communication Engineering in Photonics, Sensing, Advanced Electronics, Signal Processing & Analysis
- **Industrial Engineering** - Technical Support and Training for design and product evaluations
- Advanced troubleshooting techniques and testing life-cycle methodology for software and hardware
- Project Management including PRINCE2® certified and Leadership management

EMPLOYMENT

- ★ **(January 2022 – Present) QinetiQ Australia Ltd, Full-time Permanent, Principal Engineer (Senior RF Systems/EMC/EMI Engineer)**
 - **I am a senior engineer in QinetiQ** - working for a client within Department of Defence, providing advisory, evaluating and decision making for next generation defence technologies to phase-in of the capability and suitability of advanced defence technologies to improve the architecture of various land-based platforms looking at RF Systems, EMC and EMI emissions and sustainability of these technologies effectiveness in the battleground with PLA-IES (formerly PMICA) including RADHAZ assessment (key requirement from stakeholder). I had the lead role in RF Engineering within the project. Mentored junior (intern) and graduate students. Worked on new testing platform for any type of field trials. Worked on Risk, H&S aspect of the project particularly EMI & EMC but more importantly on RADHAZ – Radiation hazard requirements and limits for personnel using in the field or in use by the stakeholders.
 - Participated in a weekly meeting with the customer where I was the Lead RF & Engineering Testing Development (consistently discussing with other multi-disciplinary engineers and the Customer Engineering Director/Principal Engineer with recommendations for the System Safety Working Group where I had to present my testing and certification outcomes so it can be used in the field (or trials) with Final Reports/documentations/presentation slides/etc.
 - **Received an “Outstanding Team Award” from PLAT-IES team director and the Stakeholder Leadership iDirector**
 - Currently working on QinetiQ critical System Engineering documentation required, working along with the Deputy Chief Engineer and TA certification colleague.
 - Received an excellent 2022-2023 performance review from the Engineering Manager in QinetiQ
 - Contributed the change of radiation testing as to-date, changing to 2021 (ICRP finally released new standards), all nations globally needed to adapt. My expertise in the detail review of current ARPANZA (Australia standard control) & new standards (i.e. ARPANZA had updated) was recommended for use and agreed by stakeholders. Thus, Customer products were now tested for safe use commercially & in defence. Working with the certification organisations, **move to new standards was implemented in July-August 2022 and this is in use as of present. My analysis and recommendation were highly valuable. This is something that I have contributed to the Australia community for use of these products are safe.**
- ★ **(June 2020 – Present) Sub-contracting/Professional Engineering Consultant and Private Tutor/Tutorials (EducationalLuminance.com.au or EducationalLuminance.com):**
 - I am teaching High School Students in Australia especially Victoria VCE Curriculum and IB Year 11 & 12 courses in:
 - All type of Mathematics VCE and Other States Curriculum(Foundation, General, Methods, Further Maths, Specialist)
 - Physics
 - System Engineering
 - **Tertiary Engineering courses (last year 4 student got ATAR 98+, 1 student with ATAR 99.2 - Mathematics**
 - Physics
 - System Engineering
 - Electrical/Electronics/Optical Fibre Systems, Telecommunications, RF/Microwave Technologies, Project Management and many other courses within the professional expertise/experience where other teaching contributions in various courses at universities and colleges (can be consulted as needed)
 - Introduction to Matlab&Simulink for Engineering applications
 - Projects within the engineering program and Master/PhD thesis supervision (where applicable)
- ★ **(Oct 2015 – Present) Principal Technical Consultant – Provide expertise and support in the following technical and management & leadership roles (Commercial and Research Interests):**
 - Corporation and Industrial Training in Engineering

- Fibre-Optic Sensing design, analysis, next-edge technologies and algorithms
 - Electronics engineering (including High Power Electronics and Electrical Power Systems)
 - Programming in MATLAB&Simulink including analytics, machine vision, deep learning, signal processing, etc
 - Security architectures for telecommunications and defence applications
 - Telecommunications (optical network design, access networks, HFC & fibre distribution)
 - Some knowledge of system protocols, multiple network vendors (i.e. Alcatel-Lucent, Cisco, Juniper, Arris, etc)
 - Project & Leadership Management (Project Manager of System Architecture Design, Delivery & Support)
 - Optical Modulator design, linearization and manufacturing techniques
 - Design, Fabrication, Testing, Flip-chip Technology, Pig-tailing, Packaging either Optoelectronics with Monolithic device (i.e. LiNbO₃, Silica on Silicon, GaAs, Ceramic and other materials for both photonics but in electronics including mechanical engineering applications)
 - Integration of RF & Photonics Systems
 - Optical Network, Photonics and Optoelectronics design
 - Short-course training for Telecommunication & Defence organisations (i.e. design, system, transmission and integration)
 - Teaching High School Students (Year 7 – 12) – VCE and Interstate Year 11 & 12 Entrance Exam Courses (Mathematics, Physics, Chemistry, Technology and System Engineering)
 - Key strength in providing technical support, testing and debugging methodologies in software and hardware technologies
 - Investigating many computer programming tools like Python, C++, JAVA, .NET, C#, etc for many analytical applications
- ★ **(October 2021 – December 2021) RMIT University, Fixed-term Contract, Research Fellow**
- I am unable to provide full details due to the sensitivity and security of the project
- ★ **(Jan – October 2021) RMIT University:**
- **Teaching** – Introduction to Professional Engineering Practice (**1st Year Course**), All Engineering Disciplines
 - **Research** – Undertaking research project part of a collaborative work with industry (Commercial-in-Confidence)
- ★ **(July 2020 – 2022) University of Melbourne:**
- **Teaching** – Lightwave Systems (*Master's Engineering Course, Lecturing, 2021*), High Speed Electronics (*Master's Engineering, Senior Assistant, Workshop, Exam assessment, 2020*) & continue to support in Semester 2 with Prof Stan Skafidas, Semester 2 - Electronic System Design (*Master's Engineering, Workshop, possible lecturing, ESD-Altium*) with A/Prof Ranjith R. Unnithan, Power Electronics (*Master's Eng., Workshop, possible lecturing*) with Dr Maria Vrakopoulou
 - **Research** – Undertaking research project with university and Defence organisation (Collaborative)
- ★ **(April 2018 – June 2020) Senior Academic/Lecturer Equivalent to A/Prof.** (*Applied Engineering College (AEC) & Colleges of Excellence accreditation, Kingdom of Saudi Arabia affiliated with Lincoln College International (UK) and University of HULL (UK), Reporting to Head of Department (HoD) of Electrical and Electronics Technologies (EET)*). My role was lecturing (Preparation of Teaching Materials), tutorials, consultation, supervision & demonstrator for undergraduate programs in the following courses*** (**All courses in English Medium**):
- Electronics Devices (2nd year) ○ Fundamentals of Electrical Signals (1ST & 2nd year)
 - Computer Programming with MATLAB&SIMULINK AND c++ (2nd AND 3RD year)
 - Power Electronics & Electric Drive Engineering (3rd Year) ○ Automated Control System with MATLAB&SIMULINK (3rd year)
 - Analog Electronics and/or Applications (2ND & 3RD year) ○ Digital Electronics and Applications & Advanced Digital Systems (2nd year) ○ Measurement Systems and Sensors (2ND year) ○ engineering system applications (3rd year) ○ Product Design and Development (3RD year) ○ Power Engineering Measurement & Instrumentations (2RD year) ○ Project Supervision (Final Year Engineering Program - Mechatronics, Electronics and Electrical)
- ***And being part of the Committee Member for Curriculum Design and Examination Reviewer with Electrical & Electronics Engineering
- ★ **(Feb 2017 – March 2018) Senior Academic** (*RMIT University, Reporting to Associate Dean of Electronics and Telecommunications Engineering Discipline, School of Engineering, Undergraduate and Postgraduate Courses*)

- I was involved in the lecturing/teaching, tutorials, consultation, supervision (i.e. laboratories and projects) and demonstrator (i.e. laboratories) for undergraduate and postgraduate programs in the following courses:
 - Optical Fibre Technology (4th Year and Postgraduate)
 - Electrical Engineering Analysis (1st Year Engineering Analysis using Matlab)
 - Microwave Circuits and Systems (4th Year and Postgraduate)
 - Electronics Engineering (2nd Year where +250 Students undertaking and 3rd Year with 40+ Students Undertaking)
 - Mechatronic Engineering where Electronic, Optical, Microwave Integrated Packaging (DC to Very High Frequency Operation (4th Year and Postgraduate)
 - Communication Engineering (2nd Year where +220 Students Undertaking and 3rd Year including Analog & Digital Systems, Basic of Optical Fibre Communication System & 3rd Year Comprehensive Optical Fibre Communication System Design)
 - Radar Systems (4th Year and Postgraduate)
 - Project and Research Supervision (4th Year Design Engineering and Masters Advanced Design Engineering with Extended Project Design Supervision) in various projects from optical, microwave, wireless technologies, sensing with electronic design, Telecommunication Engineering and integration of microwave-photonics systems and electronics as a packaged and embedded system design using microcontroller (i.e. successfully completed 8 students for graduation)
 - New Course Preparation for 3rd Year (Also for Postgraduate and 4th Elective) in Optical Communication System & Network Engineering. I have provided and delivered this course in my first year of course development with significant success) – Reported R&D to Associate Dean of Electrical & Biomedical Engineering (i.e. 90+ Student Enrolment in 2017 compared to 40-50 students in 2016)
 - Advanced Engineering Mathematics and Statics

- ★ **(July – December 2016) Casual Senior Academic Staff** (*RMIT University, Reporting to Associate Dean of Electronics and Telecommunications Engineering Discipline, School of Engineering, School of Electrical and Computer Systems Engineering, Undergraduate and Postgraduate Courses*)
 - I am involved in the teaching, tutorials, consultation, supervision (i.e. laboratories and project support) and demonstrator (i.e. laboratories) for undergraduate and postgraduate programs in the following subjects and course content:
 - Communications Engineering (2ND year)
 - signals and systems
 - signal processing
 - fibre-optics and communications
 - Radar Systems (4th year and Postgraduate)
 - radar technologies and strategies
 - radar detection systems
 - applications

- ★ **(Feb 2016 – March 2016) Mission Critical Communications & Mobility Engineer & Bid Writer** (*NEC Australia – Consultant working with Chief Engineer*)
 - Tender preparation & documentation including review of requirements and specifications for a Large Australian Project

- ★ **(Jul 2009 – Jun 2015) Applications Engineering Manager** (*Future Fibre Technologies Ltd. Reported to CTO/PDM – Feb2006 to mid-2013, CEO – mid-2013 to March 2014, CSTO – March 2014 – Feb 2015, VP (R&D) – Feb 2015 to June 2015*):
 - Autonomous and manage day-to-day activities and provided support to the team
 - Review and document competitor products (i.e. performance, limitations) & forecast strategies for early products to market.
 - Prepare and present budgets for various Application Engineering team, organisational business and R&D projects
 - On-going planning and delivery schedules
 - Managing documentation for Product life-cycle (i.e. technical documents, review meetings, quality audits, design, testing procedures & plan, performance, qualification to meet international standards)
 - Preparation of technical (i.e. requirements and specification) documentation

Key High-value Projects as a “Program/Project Manager”

- **KEY PROJECT 1** - Multi- \$Million\$ Tender Process for State-of-the-Art Secure Link project simultaneously with Optical Data Transmission on same fibre cable to protect many 1000kms of Datalink Fibre Network for Defence Applications (i.e. FFT has completed and secured a successful tender) for Early Warning and Intrusion Detection
 - Discussions, delegating, influence and directing third party organisations
 - Managing team at FFT with Software engineers, Electronic engineers, DSP engineers, Manufacturing operation, Fibre-systems and Technical support engineers
 - Prepare extensive documentation for evaluation, product design and implementation, manufacturing processes on large scale, product operation manuals, maintenance and other logistic documentations
 - Interaction with other stakeholders (i.e. contractors, integrators, other OEM manufacturers - CISCO, JDS Uniphase, AFL, Fujikura, Sumitomo, Nortel, Finisar, Passive components manufacturers, etc)
 - Preparation and on-going training to integrators and large-scale manufacturers
 - Day-to-day on-going activities at FFT and discussion with contractors
 - Apply sensing unit integrated with optical routers and switches
 - Complex integration testing of hardware and software technologies
 - Documented and hands-on integration testing of complex systems into telecommunication systems
- **KEY PROJECT 2** – High-Business Value for Next Generation of Medium- to Long-haul Intrusion Detection System with Location Reporting/Early Warning (i.e. Instrumental design part of the R&D team)
 - Manage team of software, electronic, DSP, fibre-system & mechanical engineers
 - Reduced hardware in the product (i.e. reduce the use of 3rd part hardware modules)
 - Next generation of software monitoring product
 - Next generation of efficient industrial computing hardware system
 - Low cost for manufacture
 - Reduced power consumption
 - Ease of maintenance
 - Much better performance over existing products
- **KEY PROJECT 3** - High-Business Value with Instrumental in Next Generation Product Design having a Short Zone Detection and Early Warning
 - Manage team of software, electronic, DSP, and fibre-system engineers
 - technical support but also more efficient manufacturing processes
 - Compact design (i.e. ease of mounting on wall, outdoor or simply place in the AC rack)
 - Very low power consumption
 - Highly efficient performance
 - Ease of large-scale manufacture
 - Novel hardware and intuitive software protocols – very high value Intellectual Property
 - Plug-n-Play product

- Documentation control to meet quality standards – design, testing to international standards, release product and training
 - Training of FFT personnel, integrators and customers including attended customer meetings
- Investigation and enhancement of Nuisance Mitigation algorithm and classifications within FFT Proprietary software
- For all FFT products, testing of software and hardware was adhered to international standards as per the accredited testing life-cycle. This includes final approval of all testing procedures of products.
- Technical review and documentation of all market place perimeter detection products
- Technical brochures and specification documentation
- ISO 9001 accreditation documentation and audit for R&D design process of new products (internally and externally)

★ (Jul 2007 – Jun 2009) **R&D Team Leader** (*Future Fibre Technologies Ltd, Reported to CTO*):

- Autonomous and manage day-to-day activities and provided support to the team
- **KEY PROJECT 4** - New manufacturing process for the products (i.e. research, investigate, analyse, document & manufacture achieved 2 Patents). The final product delivery with independent multi-channel sensing (8 or 16 channels).
- **KEY PROJECT 5** - Enhancement of FFT Long-haul products (Review, analyse, design, manufacture & document)
 - For all FFT products, testing of software and hardware is adhered to international standards as per responsibilities of Senior Fibre System Engineer and Fibre System Engineer to accredited testing life-cycle.
 - Control of documentation – design, testing procedures, release of software and training materials
 - Training of FFT personnel, integrators and customers including customer meetings
 - Re-examine all FFT IPs
 - Continued investigation of Nuisance Mitigation algorithm with FFT Proprietary software
 - ISO 9001 accreditation documentation and audit for R&D activities in design process

★ (Jul 2006 – Jun 2007) **Senior Fibre Systems Engineer** (*Future Fibre Technologies Ltd, Reported to PDM*):

- Autonomous and manage day-to-day activities and provided support to the team

- Complex integration testing of differential hardware and software technologies
- Documented and hands-on integration testing of complex systems for integration into telecommunication systems based on requirements/specifications that provide test cases and solutions
- **KEY PROJECT 6** - Review, analyse and document for enhanced FFT products with automated calibration and testing
 - Review FFT IPs
 - Investigation of Nuisance Mitigation algorithm and its incorporation in FFT Proprietary software
 - were used in the new software and hardware releases. All the test procedures, documentations and tools were further customised to evaluate and test all FFT products as specified in the requirement of ISO9001 business operating document.
- **KEY PROJECT 7** - Collaboration with defence on sensor technology (i.e. Technical appraisal)
 - Review and Technical documentation for all global market in perimeter detection products
- ★ **(Feb 2006 – Jun 2006) Fibre System Engineer** (*Future Fibre Technologies Ltd, Reported to PDM*)
 - Review, analyse and document of FFT product portfolios was presented to higher management
 - Testing of software – creating test plans based on software protocols, debugging strategies and final testing documentation. This includes testing procedures for future software algorithms and protocols. Importance of testing software with test cycle including testing of microcontrollers - programming and testing outputs.
 - Hardware testing - Based on hardware design, hardware test plans and final technical testing documentation for proof-of-concept (POC) product demo.
 - Final testing integrated software and hardware as final consolidated solution as a final test cycle (i.e. release cycle and approvals for manufacturing process of final product delivery.
 - Final testing of product for approval, quality and aligned to international standards (i.e. ISO9001) including meeting safety factors. Managed test plans, procedures and debugging using commercial test tool
 - Feasibility study for future enhancement of FFT products
 - Review international standards for all FFT Products on Laser performance, limits and safety
- ★ **(Jan 2002 – Jan 2006) Research Fellow** (*RMIT University, Australian Photonics CRC, Microelectronics & Materials Technology Centre (MMTC)*), performing:
 - Research, design, manufacture and packaging of High-Speed Optical Modulator
 - Research of novel LiNbO₃ optical modulators: resonantly enhance, Single-Side-Band (SSB) • Investigation of Flip chip technology for specialised high-speed optical modulator packaging.
 - Part of the work required extensive use of RF equipment's – Anritsu Network Analyser (upto 40GHz), Agilent RF Spectrum Analysers, High-Frequency (HF) RF components such as passive and active devices, integrated circuit (IC)'s, monolithic circuits, etc
 - Lecturing, demonstration and knowledge of GPON, Optical nodes, Optical Routers, Switches for optical systems
- ★ **(Jul 2003 – May 2004) Lecturer** (*RMIT University, School of Electronics and Computer System Engineering*) performing the following tasks:
 - Course coordinator and preparation of lecturing materials for this course (lead lecturer)
 - Lecturing undergraduate 3rd and 4th year & Postgraduate in Optical transmission systems and devices including come presentation on RF technologies
 - Demonstration of laboratories and tutorials on above courses including communication, electronics and system & network engineering
 - Prior to this period (Mar 1995 – July 1999), I had been a supervisor and demonstrator (or tutor) to undergraduate and postgraduate courses demonstrating laboratories and tutorials to large student groups.
- ★ **(Jul 1999 – Sept 2002) Research Associate** (*RMIT University, Australian Photonics CRC, DSTO Defence Contract, Microelectronics & Materials Technology Centre* performing the following tasks (**KEY PROJECT 8**):
 - Research, design, manufacture, packaging of High-Speed Optical Modulator, electronic & RF circuits for characterization.
 - Overseeing the development of the High-Speed Optical Modulator from design, fabrication (i.e. optical and RF devices), testing and packaging.
 - Set-up configuration of measurement systems for Optical and RF characterization.
 - Pig-tailing (or attaching fibre process) of optical devices – passive and active
 - Testing Methodology - Anritsu Network Analyser (upto 40GHz), Agilent RF Spectrum Analysers, High-Frequency components (passive and active devices), integrated circuit (IC)'s

- High-Frequency testing using probe measurements using Network Analysers but also using standard connectorised components, ICs and designed and fabricated integrated circuits. I was working with highly-skilled test and measurement configurations and equipments.
- ★ **(Jan 1996 – Jun 1996) Mobile Support Engineer (Ericsson Australia Pty Ltd)**
- Technical support for Ericsson mobile and PABX systems for customers (Telstra, Vodafone)
 - Testing and debugging of release software for delivery product plans.
- ★ **(Jan 1995 – Jun 1999) Teaching Tutorials & Lab Demonstrator/Workshops including Support Lecturer (RMIT University)**
- Electronics, Signals and Networks (ALL YEARS from 1ST TO 4TH YEAR AND POSTGRADUATE)
 - Optical Fibre system and technology (4TH YEAR AND POSTGRADUATE) • Industry short-course training

KEY ATTRIBUTES

• Communication Skills

As an engineer and manager at FFT I have pursued effective communications with my colleagues, integrators and customers. Verbal and written at highest standards in communications to present the work for designs, document controls and presentation. I have discussions with higher management at FFT but also with integrators and customers. This encouraged me to undertake training courses to FFT personnel, integrators, partners and customers on FFT products and applications including tender applications for large organisation. As a researcher during my postgraduate studies and during employment, I had written and oral presentation for my research papers at conferences, technical journals and reports. My research didn't end at university but it extended and continued at FFT. This included new patents or internal intellectual property as part of FFT research and development thereafter documented and presented to FFT personnel. **This can be attributed to many of my journal, conference and internal technical reports in industry.**

• Project Management and Leadership skills

I had been a team leader for many projects during my undergraduate projects and during my PhD studies. It extended during my employment with MMTC at RMIT University. Further, when I commenced at FFT, it provided me with effective planning and managing of R&D meetings for improving of Fibre-optic sensing systems products. I provided support at management or change control and request meetings lead me to a role as an “Application Engineering Manager”. I had to oversee, manage and lead projects including tender process and interaction with customers, junior and senior personnel at FFT. This skillset never ends as it's an on-going learning process to new and effective growth in many responsibilities. These involvements brought about the best in me with providing strong leadership skills. I have been certified with PRINCE2® in Project Management methodologies. **This can be attributed having Project Manager and Team Leader roles in Industry Projects reporting to Upper Management and being part of the Management Team.**

TERTIARY EDUCATION

- **Doctor of Philosophy (PhD) at RMIT University in Communication Engineering with the topic on “TrueResonantly Enhanced Mach-Zehnder Modulators on LiNbO₃” for Telecommunications and Defence applications. Importantly, test measurements at High and Narrow-band frequencies, 2003.**
- **Completed Bachelor of Engineering (Communication Engineering - Telecommunication, Signal Processing, Electronics and Information Technology) at RMIT University with First Class Honours, 1996. 2nd Top Student during 1995 Engineering Program Completion at RMIT University.**

PROJECT MANAGEMENT CERTIFICATION

- PRINCE2® (APMG International) Certified

PRESTIGIOUS AWARDS

- Achieved many prestigious awards during undergraduate & postgraduate education (i.e. very highly competitive awards)
- Achievement as **Fellow of Engineers Australia (FIEAust), Engineers Australia CPEng (Chartered), National Engineers Register (NER), APEC Engineer, IntPE(Aus), Business License Authority (BLA), 2023**

RESEARCH PUBLICATIONS

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- 40+ peer-reviewed international technical journals, reports and patent papers which will be provided when requested including 80+ internal reports (Key Author) and 30+ internal reports (Co-authored with Team Members in Signal Processing and mechanical & electronics packaging of industry products). These internal reports are highly classified within the industry (Commercial-in-Confidence to protect Intellectual Property as Internal IP protection) and Top-Secret due to Defence protection and classification (in Australia).
- Invited Key Speaker & Chair for a Technical Session at the Emerging Sensing Technologies Summit (ESTS) in 2016.
- 2 International patents on Optical Sensing products with key Novelty concepts.
- Internationally recognised personal in Nanotechnology and its applications for use in Sensing and Biomedical Engineering. Have been invited to present as Keynote and Invited speaker in some of the International conferences and meetings.
- Keynote speaker at 5th Conference on Biosensors and Bioelectronics, Paris, France, Oct 2021, Virtual presentation
- Currently, working on 2 books on Optical Fibre Sensing and Signal Processing (Co-authored, an outstanding colleague from previous industry and team member in this field) and comprehensive Optical Modulator Design and Application (i.e. Narrowband & High-Speed response with my PhD Dissertation, my colleague/PhD student & our PhD Supervisor).
- Plenary & Invited Speaker to provide the Welcome Speech at 6th Conference on Biosensors and Bioelectronics, UK, 2022
 - **Plenary Speaker at the Lasers, Optics and Photonics, 2023**

TECHNICAL CONTRIBUTION

- I am currently in the local and internationally recognised technical expertise in the **Fibre-Optics, Photonics, Optoelectronics, Microwave, System, Material Science, Electronics/Electrical, Sensing, Integration, Computer Science and Computational Analysis as part of the Editorial Board and Reviewers for Peer-reviewed Journals, Conferences and Other Publications** such as:
 - IEEE Journal of Lightwave Technology (**Reviewer**)
 - Journals in Optical Society of America (OSA) (**Reviewer**)
 - Journal in American Institute of Physics (**Reviewer**)
 - Journals and Conferences in Australian Optical Society (AOS) (**Reviewer**)
 - Journals in SPIE Optical Engineering and Remote Sensing (**Reviewer**)
 - American Journal of Engineering and Applied Sciences (**Editorial Board Member and Reviewer**) - Journal of Computer Science (**Reviewer**)
 - Other IEEE Journals and Transactions in Fibre-Optic Sensing, Photonics, Microwave and Material Science (**Reviewer**)
 - Optica (formerly OSA Publications) - **Reviewer, being considered to be part of the Editorial Board and under review**
 - Elsevier Journals (**Reviewer**)

PROFESSIONAL MEMBERSHIP (**Pending senior member elevation and approval*)

- ***Fellow of Engineers Australia (FIEAust), Highest Recognition Award in the professional engineering career to-date for providing my extensive experience/skillsets and expertise in my competency area of engineering work and at the same time, provide leadership and management skills to be a great professional engineer to my team and the organisations. It is clearly true to say that these accomplishments and receiving this highest engineering recognition in Australia is clearly true fact that it was everyone from my graduation to this day who have been part of my professional engineering journey and providing leadership and management***
- ***Certification from Engineers Australia – CPEng (Chartered), National Engineers Register (NER), APEC Engineer, IntPE(Aus), March 2023 (achieved in the 1st interview since I have 28+ years of professional engineering career)***
- **MOU Senior Member** (INCOSE.ORG = International Council on Systems Engineering)
- Since 1993 (31 years), **Senior Member** of “Institute of Electrical and Electronics Engineers, Inc. (SMIEEE)”.
 - July 2020 - present, Chair Victoria/Tasmanian IEEE Electron Devices & Photonics Society Joint Chapter. In November 2017 – April 2018, Chair of Victorian, Australia IEEE Electron Devices & Photonics Society Joint Chapter.
 - Representative in the Victorian IEEE Section Committee as a key volunteer member for Senior Member Elevations (Key referee in Victoria, Australia for providing reference to Members of IEEE to become Senior Members of IEEE).
- Senior Member of Systems Engineering Society of Australia (SESA) and part of the committee including with INCOSE
- FIEAust. Member of Information, Telecommunications and Electronics Engineering (ITEE), Australia affiliated with Engineers Australia
- Committee Member of Engineers Australia, Victorian Division Office Bearer and Volunteer
- Life-Member of IEEE Microwave Theory and Techniques Society (LM-MTT-S)
- Member of IEEE Photonics Society
- Member of IEEE Electron Devices Society
- Senior Member of Optica (formerly Optical Society of America) (SMOptica, formerly OSA)*

- Member of American Institute of Physics (MAIP)*
- Member of Australian Optical Society (MAOS)*
- Certified System Engineer, Australia
- Senior Member of Society of Photographic Instrumentation Engineers (SMSPIE)*
- Member of The Chartered Institute of IT/British Computer Society (MBCS)
- Member and Certified PRINCE2® Project Management and Leadership
- Australian Institute of Management (AIM) Courses in Supervisor/R&D Team Leader, Manager & Experienced Manager

PUBLICATIONS

- Detail list of peer-reviewed and other publications will be provided on request

RESIDENTIAL STATUS

- **CITIZEN** of AUSTRALIA (*i.e. over 30 years as Citizen and +33 years in Australia*)

REFEREES

- Detail list of referees can be provided when requested (i.e. Significant reference portfolio from industry and academics are available).

CONTACT DETAILS

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