

FACULTY PROFILE FORMAT

Staff Name	: G D VIGNESH M.E.,(Ph.D)
Staff Photo	
Faculty ID	: TEC60
VIDWAN ID	: 606098
Designation	: Assistant Professor
Qualification	: M.E. Communication Systems
Teaching Experience	: 8 years 9 months
Official Mail ID	: vigneshgd@stjosephs.ac.in
LinkedIn	: mr-vignesh-g-d-479006324
SCOPUS Link	: www.scopus.com/authid/detail.uri?authorId=57203344932
Publon WoS Link	: https://www.webofscience.com/wos/author/record/AAH-8113-2020
Google Scholar ID	: https://scholar.google.com/citations?hl=en&user=_r-DEbYAAAAJ
ORCID ID	: https://orcid.org/0009-0008-8024-3980
Area of Specialization	: Wireless Communication, Cognitive Radio Networks , Optical & Sensor Networks
Subjects Handled	: <ul style="list-style-type: none"> ● Wireless Communication & Networks ● Ad Hoc & Wireless Sensor Networks ● Satellite Communication ● Communication Engineering & Digital Communication
Books Published	: <p>Advances in Computer Science and Artificial Intelligence, Authors: Dr.GN Balaji, Dr.AM Balamurugan, Dr.AKP Kovendan, Mr.GD Vignesh. Publisher: COSMAS Scientific Publications, ISBN: 978-81-19359-39-4 (2023).</p> <p>Machine Learning and its applications Publisher: Scientific International Publishing House (2024). ISBN: 978-93-6674-846-7.</p>
Publications	: <p>Journals:</p> <ol style="list-style-type: none"> 1. Deep reinforcement learning for comprehensive route optimization in elastic optical networks using generative strategies Renjith, P.N., Sujatha, G., G.D Vignesh, Vinoth, M., ...Prabhu, M.R., Mouleswararao, B. Optical and Quantum Electronics 55(13), 2023. 2. Adaptive rate and modulation scheme for M2M communication using quantum optical and 5G communication Vignesh, G.D., Chillakuru, P.D.,

Maheswari, S., ...Mouleswararao, B., Markkandan, S. Optical and Quantum Electronics 55(11), 2023.

3. Sensor data fusion techniques in the construction of generalized VORONOI graph for on-line motion planning in robot navigation **Vignesh, G.D.**, Ramu, A., Raja, J.T., ...Haldorai, A., Senthilkumar, G. International Journal of System Assurance Engineering and Management, 2022.
4. Hybrid optical amplification units in passive optical access communication networks for the maximization of long fiber reach and average repeater spacing in upstream/downstream ... K Krishnan, **GD Vignesh**, BS Ramachandran, R Eshwar, PM Patnala, ... Journal of Optics, 1-11, 2025.
5. High capacity performance signature of micro optical mechanical system switches based fiber Bragg grating scheme implementation in optical WDM data routed center networks RT Prabu, S Subramanian, **GD Vignesh**, R Ashwini, A Raja, ... Journal of Optical Communications, 2024.
6. Next-Generation NLP Techniques: Boosting Machine Understanding in Conversational AI Technologies D Sharma, EN Hamed, N Akhtar, **GD Vignesh**, SA Thomas, M Sekhar J. Comput. Anal. Appl 33, 100-109,2024.
7. A Novel Iterative Demosaicing Algorithm Using Fuzzy Based Dual Tree Wavelet Transform R Niruban, R Deepa, **GD Vignesh** Journal of Critical Reviews 7 (9), 141-145, 2019.
8. Empowering sustainable farming practices with AI-enabled interactive visualization of hyperspectral imaging data S Subudhi, RG Dabhade, R Shastri, V Gundu, **GD Vignesh**, A Chaturvedi Measurement: Sensors 30, 100935, 2023.
9. Neural network-based optimization of intelligent odometry system in an autonomous robot for accurate position and orientation estimation DKB Anandakumar Haldorai, M Arulaalan, **GD Vignesh**, ... Nveo-Natural Volatiles & Essential Oils Journal| Nveo, 1665-1674, 2021.

Conferences:

1. Design of Social Distance Monitoring Approach Using Wearable Smart Tags in 5G IoT Environment During Pandemic Conditions F Molina-Granja, R Lozada-

	<p>Yáñez, FJ Santacruz-Sulca, GD Vignesh MPL Ramos, ...IOT with Smart Systems: Proceedings of ICTIS 2022, Volume 2, 731-740, 2022.</p> <ol style="list-style-type: none"> 2. Detection and reporting of wildfires in forests using a wireless sensor network RV Reddy, RV Anandh, GV Londhe, GD Vignesh, P Purohit, VS Rao Challenges in Information, Communication and Computing Technology, 493-498, 2024. 3. Advanced Deep Fake Detection: Leveraging Xgboost and SVM with Multi Modal Features GD Vignesh, K Suryaprakash, Shyam Sunadar, SSRN, 2024. 4. AI Powered Cyberbot for enhancing the Workplace Efficiency GD Vignesh, Princy S, Sharon Rose J., SSRN, 2024. 5. IoT-Based Landslide Monitoring and Prediction System Using NodeMCU and ThingSpeak for Real-Time Data Analysis SR Vignesh, P Yuvanesh, GD Vignesh Available at SSRN 5088832, 2024. 6. Advancement of Cloud-Based Ultra-Secure Communication using Quantum Key Distribution Protocols with Physical Layer Security in 6G Networks TB Sivakumar, GD Vignesh, EK Kumar, SSRN, 2024. 7. Optimizing Security in OBS: Implementation and Evaluation of Modified SHA-160 Algorithm AM Balamurugan, GD Vignesh, AKP Kovendan 2024 First International Conference on Software, Systems and Information, IEEE, 2025. 8. An Efficient Cluster based Co-Operative-ED Max Selection Algorithm for Improving the Detection Accuracy of SU Nodes in CR—WSN GD Vignesh, VP Sabaridharan, AM Balamurugan, TR Ronald 2024 First International Conference on Software, Systems and Information, IEEE, 2025. 9. An Energy Efficient Improved Clustering based Data Compression Protocol in Wireless Sensor Network AS Anshad, S Tiwari, GD Vignesh, P Charan, KR Chandra, R Manchanda 2024 7th International Conference on Contemporary Computing and Informatics ..., 2024. 10. Power control scheme to mitigate interference for MIMO Cognitive Radio K Gunaseelan, GD Vignesh 2015 3rd
--	--

		International Conference on Signal Processing, Communication, IEEE, 2015.
FDPs/ Workshops activities conducted:		<ul style="list-style-type: none"> ➤ As an Organizer for AU sponsored Two-week FDTP on EC6801-Wireless Communication from 3-12-2018 to 15-12-2018. ➤ As an Organizer for AU sponsored 5-day Online FDTP on EC8702-Ad-hoc & Wireless sensor networks from 27-6-2022 to 2-7-2022. ➤ Organized Workshop on “Roadmap to become an Entrepreneur” on 3rd September 2024.
ED cell activities & MoU activities conducted		<ul style="list-style-type: none"> ➤ Organized Guest Talk on “Health care Start-ups: Turning Vision to Valuable Impact” on 4th September 2024. ➤ MoU signed with Vayusastra Aerospace Limited, an IIT-incubated Start-up on 4-10-2024. ➤ Organized Guest Talk on “Unmanned Aerial Vehicles and its impact on Aviation” on 4th September 2024. ➤ Visited Centre for Entrepreneur Development (CED), Anna University to explore possible collaboration with successful Entrepreneurs. ➤ Organized workshop on “Industrial Automation” for II year ECE students on 8th January 2025. ➤ Organized II days’ workshop on “Drone Technology” for II year ECE students on 27th & 28th January 2025. ➤ Organized “VENTURE VISION” - An Idea Pitching Event on 29th January 2025.
Conference /Workshop Attended	:	<ul style="list-style-type: none"> ➤ 4-Week NPTEL FDP course on “Basics of Software Defined Radios and Practical Applications” during Jul-Aug 2024. ➤ 12-Week NPTEL FDP course on “Communication Networks” during Jan-May 2024. ➤ Five days Online STC on SCILAB for Beginners at NITTTR, Chandigarh from 24-7-2023 to 28-7-2023. ➤ Five days Online AU sponsored FDP on Antennas & Microwave Engineering at Karpagam Institute of Technology, Coimbatore from 14-6-2021 to 19-6-2021.

	<ul style="list-style-type: none"> ➤ Five days Online AU sponsored FDP on Signals and Systems at Dr. Mahalingam College of Engineering & Technology, Pollachi from 7-6-2021 to 12-6-2021. ➤ Five days Online AU sponsored FDP on Electronic Circuits-I at MIT, Chennai from 24-5-2021 to 29-5-2021. ➤ Three days Online FDP on Medical Signal & Image Analysis at St Joseph's College of Engineering from 15-17th of June 2020. ➤ Five days AICTE sponsored ATAL FDP on Internet of Things (IoT) at College of Engineering Guindy from 29-10-2019 to 2-11-2019. ➤ FDP on Machine Learning at Sri Venkateswara College at Tirupati from 12-17th of November 2018. ➤ Workshop on Fiber optic cables and link management conducted by PSG college of Technology from 17-18th of FEB 2017. 																		
<p>Patent Details</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%; text-align: center;">Sl. No.</th> <th style="width: 70%; text-align: center;">Indian Utility Patent Title</th> <th style="width: 20%; text-align: center;">Year of Publication</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1.</td> <td>AI-Driven Statistical Analysis Of Social Media Data For Enhanced Event Promotion And Audience Interaction.</td> <td style="text-align: center;">2023</td> </tr> <tr> <td style="text-align: center;">2.</td> <td>A Multi-Agent Ai System For Collaborative Music Composition and Performance.</td> <td style="text-align: center;">2024</td> </tr> <tr> <td style="text-align: center;">3.</td> <td>IoT Enabled Edge Computing System For Smart Agriculture Applications.</td> <td style="text-align: center;">2023</td> </tr> <tr> <td style="text-align: center;">4.</td> <td>Automated Network Slicing In 6g Networks Using Reinforcement Learning.</td> <td style="text-align: center;">2024</td> </tr> <tr> <td style="text-align: center;">5.</td> <td>Detecting And Classifying Fraudulent SMS And Email With A Robust Machine Learning Approach.</td> <td style="text-align: center;">2024</td> </tr> </tbody> </table>	Sl. No.	Indian Utility Patent Title	Year of Publication	1.	AI-Driven Statistical Analysis Of Social Media Data For Enhanced Event Promotion And Audience Interaction.	2023	2.	A Multi-Agent Ai System For Collaborative Music Composition and Performance.	2024	3.	IoT Enabled Edge Computing System For Smart Agriculture Applications.	2023	4.	Automated Network Slicing In 6g Networks Using Reinforcement Learning.	2024	5.	Detecting And Classifying Fraudulent SMS And Email With A Robust Machine Learning Approach.	2024
Sl. No.	Indian Utility Patent Title	Year of Publication																	
1.	AI-Driven Statistical Analysis Of Social Media Data For Enhanced Event Promotion And Audience Interaction.	2023																	
2.	A Multi-Agent Ai System For Collaborative Music Composition and Performance.	2024																	
3.	IoT Enabled Edge Computing System For Smart Agriculture Applications.	2023																	
4.	Automated Network Slicing In 6g Networks Using Reinforcement Learning.	2024																	
5.	Detecting And Classifying Fraudulent SMS And Email With A Robust Machine Learning Approach.	2024																	
<p>Consultancy Work</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%; text-align: center;">Sl. No.</th> <th style="width: 40%; text-align: center;">Title</th> <th style="width: 25%; text-align: center;">Company Details</th> <th style="width: 25%; text-align: center;">Amount Sanctioned</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	Sl. No.	Title	Company Details	Amount Sanctioned														
Sl. No.	Title	Company Details	Amount Sanctioned																

		1.	Solar Powered communication system in Remote Areas. Academic Year & Duration: 2023-2024 (July 2023 to January 2024)	Advantech Instruments & Services, Nolambur, Chennai-95	Rs.75,000/- (Seventy Five Thousand Only)
Awards & Rewards Received		<ul style="list-style-type: none"> Received Cash reward of Rs. 10,000 from the Management for Paper & patent publication in 2024. Inspiring Educator Award presented by NTL Publications during the academic year 2024-2025. 			
Recognition from NPTEL & Other Sources		<ul style="list-style-type: none"> Awarded Elite + Gold medal & 1% Topper for NPTEL course on “Basics of Software Defined Radios and Practical Applications” during Jul-Aug 2024. Awarded Elite + Silver medal & 1% Topper for NPTEL course on “Communication Networks” during Jan-May 2024. Best Paper Presentation award for “Optimizing Security in OBS: Implementation and Evaluation of Modified SHA-160 Algorithm” at IEEE SSITCON 2024, Tumakuru. Peer reviewer for several reputed Journal Publishers like Springer Nature, IGI Global Book chapter & Elsevier. Invited to deliver a Guest Lecture on “Machine Learning in Healthcare” at Meenakshi Sudararajan Engineering College, Kodambakkam, Chennai on 19th Feb 2025. 			