Dr. K. ARUN GANESH

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✉ arunganesh@pmu.edu

SKILLS & ABILITIES

C, C++, Python, JAVA, MATLAB, EEG-LAB, SCILAB, ORIGIN, BIOPAC EEG and EMG System, MS-Office, E-TAP, LABVIEW, XILINK, P-PSICE, MULTISIM

EXPERIENCE

June 2011 – Present	**Assistant Professor (Senior Scale)**
	Department of Electrical and Electronics Engineering at Periyar Maniammai Institute of Science and Technology, Thanjavur, Tamilnadu, India.
June 2010 – April 2011	**Assistant Professor**
	Department of Electrical and Electronics Engineering at Vels Srinivasa College of Engineering and Technology (Present-Agni College of Technology), Chennai, Tamilnadu, India.

EDUCATION

Jan 2018 – May 2024	**Ph. D – Instrumentation and Control Engineering** **National Institute of Technology, Tiruchirappalli (NIT-Trichy).**
	Thesis Title – Analysis of Corticomuscular Activities for the Recognition of Lower Limb Movements.
	Research Area – Biomedical Signal Processing
Aug 2008 – May 2010	**M. E – Control and Instrumentation Engineering – First Class** **College of Engineering Guindy (CEG), Anna University, Chennai.** (Faculty of Electrical Engineering and studied by **GATE 2007** Score)
Aug 2004 – May 2008	**B. E – Electrical and Electronics Engineering – First Class** E. G. S. Pillai Engineering College, Nagapattinam, Tamilnadu. Affiliated by Anna University, Chennai.

CURRENT RESEARCH FOCUS

- ❖ EEG and EMG Signal Processing

- ❖ AI and ML Applications in Biomedical Signal Processing

- ❖ Corticomuscular Coherence (CMC) Analysis

- ❖ Wavelet Coherence (WC) Analysis

- ❖ Transfer Entropy (TE) Applications in Biomedical Signal Processing

- ❖ Lower and Upper Limb Muscles Recognition

- ❖ Facial Muscles Recognition

- ❖ Gait Analysis

PEER-REVIEWED PUBLICATIONS

1. Arun Ganesh. K, Nagarajan G, Sivakumaran. N and Karthick. P. A., "Recognition of Lower Limb Movements using Machine Learning Methods and Bispectral Maps of Wireless sEMG Measurements" IEEE Sensor Letters (2023) - **(WOS & SCOPUS).**

2. Arun Ganesh. K, Vinothini. S, Sivakumaran. N, Kumaravel. S and Karthick P.A. "Analysis of Corticomuscular Coherence between Motor Cortex Region and Tibialis Anterior Muscle Using Symbolic Transfer Entropy"., IEEE International Symposium on Medical Measurements and Applications (MeMeA) 2022 - **(WOS & SCOPUS).**

3. Arun Ganesh. K, Sivakumaran. N, Kumaravel. S and Karthick. P. A, "Analysis of EEG-EMG Coherence in Low Frequency Bands", Public Health and Informatics, European Federation for Medical Informatics (EFMI) and IOS Press,2021- **(WOS & SCOPUS).**

4. Arun Ganesh. K, Sivakumaran. N, Kumaravel. S and Karthick. P. A, "Analysis of Corticomuscular Coherence between Cortical and Lower Limb Muscle Activities". Journal of Biomedical Sciences Instrumentation, Vol. 57(3), July 2021- **(SCOPUS).**

5. Arunganesh. K, Sivakumaran. N, Kumaravel. S and Karthick. P. A, "Analysis of Intra-muscular Coherence between Lower Limb Muscles using Magnitude Square Coherence", in Biomedical Signal Based Computer Aided Diagnosis for Neurological Disorders, Springer Nature, Pp: 267-280, 2022- **(SCOPUS).**

6. K. Arunganesh, N. Sivakumaran, & S. Kumaravel, "Lower Limb Amputees Rehabilitation: IOT-Based Real Time Human Movement" Springer Nature, Pp: 3017-3024, 2021- **(SCOPUS).**

7. Arun Ganesh. K, Sureshkumar. R, Ilayaraja. K "Samrt Voltage Protection System for Industries". SSRG International Journal of Electrical and Electronics, Vol. 8(9), July 2021, - **(SCOPUS).**

CONFERENCE PRESENTATIONS

1. Paper presented at National Conference on Digital Convergence -2010 in RMK Engineering College, Topic of "Design of Fault Tolerance System Design for Nano- device Memories".

2. Paper Presented in IEEE International Conference on Research & Development Prospers on Engg & Technology in E.G.S.P. Engg. College on March 2013, topic of Modeling and Analysis of silicon Nanowire Field Effect Transistor based Inverter.

3. Paper Presented in 8th IEEE International Conference on Engineering and Advancements in Technology-2018 conducted by Sri Krishna College of Engineering, Trichy on March 2018. Topic of Single phase Prepaid Energy Meter using Arduino and ARM processor.

4. Paper presented in 5th International conference on Electrical, Information and communication Technologies conducted by MAM Engg. College, Trichy on March 2019. Topic of Design and Implementation of Smart chair with Sensor Network using Wireless Module.

5. Paper presented in International conference on Trends in Emerging Energy Technologies conducted by Periyar Maniammai Institute of Science and Technology on March 2019. Topic of Raspberry-PI Based Smart Environmental Rover for Surveillance and Live Streaming.

6. Paper presented in International conference on Trends in Emerging Energy Technologies conducted by Periyar Maniammai Institute of Science and Technology on March 2019. Topic of Design and Implementation of Smart Chair With Sensor Network for Patient Parameter Monitoring System.

7. Paper Presented in International Mechanical Engineering Congress (IMEC- 2019) conducted by NIT-Trichy on Dec. 2019. Title of "Design of Force Plate for Gait Analysis".

8. Paper Presented in International Conference on Automation, Signal Processing, Instrumentation and Control (iCASIC 2020) conducted by VIT- Vellore on Feb. 2020. Title of "Lower Limb Amputees Rehabilitation: IOT based Real Time Human Movement System.

9. Paper Presented in 58th Rocky Mountain Bioengineering Symposium (RMBS-2021) hosted by the University of Mississippi Medical Center, New Orleans, LA on April 2021. Title of "Analysis of Corticomuscular Coherence between Cortical and Lower Limb Muscle Activities".

10. Paper Presented in MIE-2021., Europe on June 2021. Title of "Analysis of EEG- EMG Coherence in Low Frequency Bands".

11. Paper presented in International Conference in ICIRSM 2023, organized by St. Joseph's College of Engineering and Technology, Thanjavur, Title of "IV Therapy Control with IOT and LABVIEW". Also received "Best Paper Award" on 21st April 2023.

12. Paper presented in International Conference in ICIRSM 2023, organized by St. Joseph's College of Engineering and Technology, Thanjavur, Title of "Analysis of Corticomuscular Coherence between Cortical and Facial Muscle Activities" on 21st April 2023.

PATENT PUBLISHED

1. A patent published title of "Development of Mini Cloud Server with Portable on Board Computer", File no: 202141026747, IPR, India.

2. A patent published title of "Electricity Conservation System and Method Thereof", File no: 202141036845, IPR, India.

3. A patent published title of "Design and Implementation of E-Vehicle Charging Station Using Solar with IoT", File no: 202241010064, IPR, India

BOOK PUBLISHED

1. Book title "Let's Explore Ki CAD" by Duraigo publications, ISBN Number: 978-93-945 03-85-4

2. Book title "Sensors Hands on Learning" by Duraigo publications, ISBN Number: 978-93-94503-42-7.

ACHIEVEMENTS

1. GATE qualified in year of 2007 (IIT Kanpur).

2. Received Best Teacher Award in the year of 2010 at VSCET, Chennai.

3. Received "Young Achiever Award", from Institute of Researchers associated with MSME-2022.

4. Received "Best Teacher Award 2023" at PMIST, Thanjavur.

5. Received "Best Paper Award" in International Conference on ICIRSM 2023, Title of "Internal Vein (IV)Therapy Control with IOT and LABVIEW" at St. Joseph's College of Engineering and Technology, Thanjavur.

AREA OF INTEREST

- ❖ Control Systems
- ❖ Bio-Medical Signal Processing
- ❖ EEG and EMG signals analysis
- ❖ Signal and Systems
- ❖ Measurements and Instrumentation
- ❖ Electrical Machines
- ❖ Electrical Drives and Control

PROFESSIONAL BODIES

1. Indian Society for Technical Education (MISTE), **Membership No. : LM134676**

2. Institute of Researchers (MIR), **Membership No:042208**

3. Institution of Engineers (MIE), **Membership No: M-1794315**

4. International Water Association (MIWA), **Membership No: 15929**

WEB OF SCIENCE

https://www.webofscience.com/wos/author/record/ABZ-1314-2022?edit=orcid-syncing

SCOPUS

https://www.scopus.com/authid/detail.uri?authorId=57224206536

ORCID

https://orcid.org/0000-0001-5224-3643

GOOGLE SCHOLAR

https://scholar.google.com/citations?user=SJux3jsAAAAJ&hl=en&authuser=1