

## CURRICULUM VITAE

**Dr.VIJAYALAKSHMI.K**

### CONTACT DETAILS

**Mrs Vijayalakshmi K.**  
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**B M S College of Engineering,**  
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### Education:

**Ph. D. [Biomedical Signal Processing]: January 2008 –July 2016**  
Vinayaka Missions University  
Salem, Tamilnadu, INDIA

**M. Tech. [Bio-Medical Instrumentation]: Sep' 1993 - July'1996**  
Year of Passing: **1996**  
Department of Instrumentation, Sri Jayachamarajendra College of Engineering,  
Mysore University, 09, Mysore, Karnataka, INDIA  
Division/Class: **First Class with Distinction**

**B. E. [Electronics & Communication]: Sep' 1985 – July' 1990**  
Year of Passing: **1990**  
Department of Electronics & Communication  
Siddaganga Institute of Technology, Karnataka, INDIA  
Division/Class: **First Class**

### PhD Thesis Title:

**Independent Component Analysis of EEG Signals**

### Research Interests:

**Biomedical Instruments Design, Pattern Recognition, and Medical Imaging**

### Academic Experience: Teaching

*June' 1990 – Oct'1993: Lecturer,*  
*Dept of Electronics & Communication,*

Siddaganga Institute of Technology, Tumkur, Karnataka, India.

**March' 1993 – March'1997:** *Senior Grade Lecturer,*  
*Dept of Medical Electronics, B M S College of Engineering ,*  
*Bangalore, India.*

**March' 1997 –Mar'2010:** *Selection Grade Lecturer,*  
*Dept of Medical Electronics, B M S College of Engineering ,*  
*Bangalore, India.*

**Mar' 2010 - till date:** *Associate Professor,*  
*Dept of Medical Electronics, B M S College of Engineering ,*  
*Bangalore, India.*

### Project Experiences:

- 1. Project Title: EEG signal Analysis**  
**Duration:** 2 years  
**Designation:** *Principal Investigator*  
**Sponsored By:** BMSCE In-house Research Funding  
**Research Area:** Biomedical Signal processing  
**Amount:** 1lakh
- 2. Project Title: Infrastructure Enhancement of Biomedical Wireless Data Acquisition Facilities in Biomedical Signal Processing Lab**  
**Duration:** 2 years  
**Designation:** *co- Investigator*  
**Sponsored By:** Vision Group for Science & Technology  
**Research Area:** Bio Medical Signal Processing  
**Amount:** 20 lakh
- 3. Project Title: HRV analysis on spiritual practices**  
**Duration:** 2 years ( from 2016- 2018)  
**Designation:** *co- Investigator*  
**Sponsored By:** DST  
**Research Area:** Bio Medical Signal Processing  
**Amount:** 11 lakh

### Awards/Scholarships/Honors/Affiliations:

1 Presented a paper “Quantitative analysis of EEG signal before and After Sudarshana Kriya Yoga”, in the “ International Conference on Public Mental Health and Neuro Sciences” on 18<sup>th</sup> and 19<sup>th</sup> December 2014 ,organized by sarva sumana Association and AZyme BioSciences ,Bangalore.

**Awarded III Prize for the Paper Presentation**

2.Participated and Presented a Paper on “Miraculous effect of sudharshana kriya yoga on brain signals: a scientific approach “ in National Conference on “Stress and Health :A Frontiers of Research in stress related Diseases and Management “ Organised by Department of Zoology,

Maharani's Science College for Women ,Bangalore on 12 and 13 of February 2015SHDM(2015)

**Awarded III Prize for the Paper Presentation**

Vijayalakshmi K ,Aishwarya S , Presented a paper 'Identification of Ultra High Frequency Components in ECG using Multilayer Neural Network'. in The International Conference on Cloud Computing in Emerging Markets, 2019 :Pre-conference Workshop held on 1st March'19 at The Oterra, Electronics City, Bengaluru.

**Best Research Proposal award**

**Membership to the Professional Bodies:**

- LifeMember of Indian Society for Technical Education (ISTE):LM36679*
- LifeMember of BioMedical Engineers Society of India (BMESI):LM563*
- IEEE Member/Senior Member No:93322120*

**Technical Workshop/Training Programs Attended:**

Since the date of Service attended 45 Technical Workshop/Training Programs till date.

**PUBLICATIONS**

**A. International Journal Papers:**

- 1) Vijayalakshmi, Appaji M Abhishek", Spike Detection in Epileptic Patients EEG Data Using Template Matching Technique," International Journal of Computer Applications (IJCA) Volume 2, June 2010 Edition.
- 2) Vijayalakshmi, Payal Khanwani, Susmita Sridhar, "Automated Event Detection of Epileptic Spikes using Neural Networks", International Journal of Computer Applications (IJCA) Volume 2, June 2010 Edition.
- 3) Vijayalakshmi, Thanya, Mamatha B. V., "Analysis of Neuro Cognitive Effects on Meditation", International Journal of Computer Applications (IJCA) Volume 36, Number 1, pp. 6-9, 2011.
- 4) K. Vijayalakshmi, S. Ramachandran and M. Chandrasekaran, "Independent Component Analysis of EEG Signals and Real Time Data Acquisition Using MyDAQ and Labview", International Journal of Innovative Research in Advanced Engineering [IJIRAE], Vol. 1, No. 9, pp. 65 -74, ISSN: 2349-2163, October 2014.

- 5) K. Vijayalakshmi, S. Ramachandran, and M. Chandrasekaran, "FPGA Based Reconfigurable Memory Interface Design for EEG Data Acquisition", IOSR Journal of VLSI and Signal Processing (IOSR-JVSP), Vol. 4 (6), pp. 47-55, Dec. 2014.
- 6) Santosh N Vasist1 K Vijaylakshmi, "Multi-Parameter Patient Monitoring Platform with Wireless Transmission", IJSRD - International Journal for Scientific Research & Development| Vol. 3, Issue 11, 2016 | ISSN (online): 2321-0613
- 7) Shyamala P, Vijaya Lakshmi, Chandrashekhar B G, "Single- Lead Wearable Patch for Wireless Continuous Monitoring of ECG", International Journal of New Technology and Research (IJNTR), ISSN: 2454-4116, Vol.2(4), pp.73-76, April 2016.
- 8) Anitha T.G, K.Vijayalakshmi,"Design of Novel FFT Based Image Compression Algorithms and Architectures", International Journal of Progressive Sciences and Technologies (IJPSAT), Vol. 5 No. 1 ,June 2017, pp. 24-42, ISSN: 2509-0119.

## **B. International Conference Papers:**

1. "Machine readable blood group analyzer", International conference on advanced computing technologies (ICACT 2008), December 26-27, 2008.
2. "Heart Rate Variability Based Arrhythmia classification using Support Vector Machines", 3<sup>rd</sup> International conference on Advanced computing and communication Technology, Panipat, Delhi, November 8-09, 2008.
3. "Estimation of Effects of Alpha Music on EEG Parameters by time and frequency domain Analysis", International Conference on Computer and Communication Engineering held in Kuala Lumpur, Malaysia, May 11-13, 2010.
4. "Pilot study: Spatio-Temporal quantitative analysis of EEG power variations during Sudarshan Kriya Meditation", Conference on Stress Reduction Skills: Scientific Update, 30 and 31<sup>st</sup> August, 2014, Sri Sri Global Meditating Doctors association and the Department of Psychiatry, All India Institute of medical Science, New Delhi, Indian Institute of Technology, New Delhi.
5. "Quantitative analysis of EEG signal before and after Sudarshana Kriya Yoga", International Conference on Public Mental Health and Neuro Sciences", 18<sup>th</sup> and 19<sup>th</sup> December 2014, Sarva Sumana Association and AZyme BioSciences, Bangalore. **Awarded III Prize.**
6. "Miraculous effect of Sudharshana Kriya Yoga on brain signals: a scientific approach", National Conference on "Stress and Health :A Frontiers of Research in stress related Diseases and Management", Department of Zoology, Maharani's Science College for Women, 12 and 13 of February 2015. **Awarded III Prize.**
7. Raghavendra B, Vijayalakshmi K , M. Arora, " Intravenous drip meter & controller ", 8th International Conference on Communication Systems and Networks (COMSNETS), 24th March 2016 , Bangalore, ISSN: 2155-2509, pp.1-5.
8. Chandana.S and Vijayalakshmi.K, "An Approach to Measure and Improve the Cognitive Capability of ADHD Affected Children Through EEG Signals," 2018 IEEE

- 18th International Conference on Advanced Learning Technologies (ICALT), Mumbai, 2018, pp. 314-318. doi: 10.1109/ICALT.2018.00079
9. 2019 CCEM - PCW Best Proposal Submission (held on 1st March'19 at The Oterra, Bengaluru) to you both. **The award also carries a cash prize of Rs. 10,000.00.**

#### **INVITED LECTURES AND SESSION CHAIR**

- 1) Presented a Talk on “Biomedical Imaging principles” At National College On 02 .08.2008.
- 2) Demonstrated a “Circuit Testing in an EDUSAT Programme At Visveswaraya Technological Museum, 2008.
- 3) Was a chief guest and Delivered a Lecture on “scope of Biomedical Engineers “At VTM, On the Ocation of Science fest Valedictory function, 2009.
- 4) Delivered a Talk on “Digital Image Processing Fundamentals” At Vijiya college Bangalore On the Ocation of UGC sponsored One day Faculty Development Programme.
- 5) Was a chief guest and Delivered a Lecture on “Sir M.VISvesvaraya and his contributions” “At VTM , On the Ocassion of Sir M. VISvesvaraya Birth Anniversary celebrations on 15<sup>th</sup> of Sept. 2010.
- 6) Delivered a talk on “EEG Signal acquisition and Preprocessing” in one week ISTE sponsored short term training program on “ Brain & cognition :Neuroscience- signal and Image analysis from 7<sup>th</sup> to 12<sup>th</sup> January 2013 ,Organised by Department of Medical Electronics, BMSCE, Bangalore.
- 7) Talk Delivered: “EEG acquisition and pre processing Techniques” in National Workshop on Biomedical Systems, Technologies for Inclusive Healthcare, 23<sup>rd</sup> to 25<sup>th</sup> October 2013, PES Institute of Technology Bangalore.
- 8) Participated as a resource person in a week workshop on “Digital Image Processing and Its Application” under TEQIP-II-1.2, organized by the department of Electronics and Communication, SSIT, Tumkur from 28<sup>th</sup> January to 2<sup>nd</sup> February 2014.
- 9).Resource person in the pre conference workshop on Medical signal and Image Processing “ in “KARMIC-2014” aqn International conference for Under Graduate Medical Students held at Kempegowda Institute of Medical Science, Bangalore on April 12<sup>th</sup> 2014.
- 10).Delivered a talk on “EEG Signal acquisition and Preprocessing” in one week FDP,VTU sponsored short term training program on “ Biomedical signal Processing” from 11th to 16th June 2018 ,Organized by Department of Computer Science, BNMIT, Bangalore.

#### **CONFERENCE/WORKSHOPS/SEMINAR ORGANIZED**

- 1) Conducted a Three day workshop for students on “IMAGE PROCESSING USING MATLAB” at BMSCE from 25<sup>th</sup>,26<sup>th</sup> and 30<sup>th</sup> September 2008.

- 2) Conducted one week Meditation classes for “teaching and non teaching staffs “of BMS college of Engineering , from 08.08.2010 to 14.08.2010, Bangalore.
- 3) Conducted a Workshop on “Biomedical circuits design “ from August 11<sup>th</sup> to 14<sup>th</sup> at BMSCE for Vth semester Medical Electronics students.
- 4) Organised TEQIP-II & III sponsored one week workshop on “Real Time Signal Processing” from 10<sup>th</sup> February 10<sup>th</sup> to 15<sup>th</sup> 2014 conducted by Department of Electrical and Electronics Engineering and Medical Electronics, BMSCE, Bangalore.
- 5) Organised TEQIP-II sponsored 3 days workshop on “FPGA Design and Implementation”, from 26<sup>th</sup> to 28<sup>th</sup> June 2014 conducted by Department of Medical Electronics, BMSCE, Bangalore.
- 6) Organized one day Teqip sponsored extension Lectures on Biomedical Ethics in the Department of Medical Electronics for UG/PG students on 12. 03 .2016 .
- 7) Organized Three days TEQIP-II sponsored Workshop on “Biomedical Signal Acquisition and processing” held during 13.03.2017 to 15-03-2017 at Department of Medical Electronics, BMS college of Engineering, Bangalore.
- 8) Organized one day TEQIP-II sponsored Workshop on “Biomaterials and their Applications” held on 14.03.2017 at Department of Medical Electronics, BMS college of Engineering, Bangalore.

## **OTHER ACTIVITIES**

1. Involved in the **Laboratory Establishment Activities** (IC laboratory, communication laboratory, microprocessor laboratory) of Department of Medical Electronics, BMSCE.
2. Working as **SIS coordinator** for the Department of Medical Electronics, BMSCE, Bangalore.
3. Worked as a **TEQIP coordinator** in BMSCE.
4. Worked as one of the **VTU exam coordinator** for the even semester 2004 in college level exam coordination group.
5. Involved in MODROB proposal as one of the member in Department of Medical Electronics, BMSCE, Bangalore.
6. One of the member in the **panel of examiner**, board of VTU from the past seven years.
7. Student Advisor for the the “Medical Electronics Association”.
8. Attended the workshop on **Model question papers** for EC/TC/ML subjects organized in PESIT, Bangalore and also in Bapuji College of Engineering and Technology, Davanagere.
9. Attended the workshop on framing the **syllabus** of Basic Electronics, Organized in BMSCE, Bangalore and Medical electronics subject in MSRIT, Bangalore for the new revised syllabus.
10. Worked as **Deputy Chief Coordinator** in the Central Valuation of I/II semesters held at BMSCE, Bangalore.
11. Worked as a **Squad** for VTU examinations .
12. One of the **Co-Coordinator** for the **National Workshop** on “Advances in Medical Electronics” conducted by Department of Medical Electronics, BMSCE, Bangalore on 16<sup>th</sup> September 2006.
13. Worked as External Deputy Chief Superintendent for VTU theory exams held on December-January 2007.
14. Co-ordinator for the Hospital Training and Industrial visit.
15. Member Women cell Committee, BMSCE.
16. Working as **BOARD OF EXAMINER** for the department of medical electronics from 2009 under electrical cluster in BMSCE ( autonomous under VTU), Bangalore.

17. Has coordinated an event at BMSCE on Women's day program on March 8th 2016.
18. Served as a Judge representing Karnataka for Southern India Science Fair-2016 organized by Visvesvaraya Industrial and Technological Museum between 19th to 22nd January 2016.
19. Served as a Judge for Engineering Fair-2017 organized by Visvesvaraya Industrial and Technological Museum between 16th to 18th March 2017.

#### **Personal Details:**

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No 13/17, "NANDANA", 1<sup>st</sup> Cross,  
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