CURRICULUM VITAE

A.AMALIN PRINCE Ph.D
Associate Professor | Head of Department, EEE
| Faculty-in-Charge, Placement Unit
Electrical and Electronics Engineering
BITS Pilani K K Birla Goa Campus
Zuarinagar, Goa, India – 403726

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Areas of Research Interest:

FPGA based system design (signal & Image processing and control), VLSI signal processing architectures, Reconfigurable hardware accelerators, MEMS and applications.

Personal:

- Name: A. Amalin Prince
- Date of Birth: May 02, 1981
- Nationality: Indian
- Sex: Male
- Marital Status: Married

Education:

- PhD from Birla Institute of Technology & Science-Pilani, Rajasthan, Jan 2011.
- M.E. Applied Electronics from Sathyabama Institute of Science & Technology-Chennai
- B.E. Electronics and Communication Engineering from The Indian Engineering College - Tamil Nadu

Employment Record:

- Associate Professor: BITS Pilani K K Birla Goa Campus from July 2018 onwards :: Department of Electrical and Electronics Engineering
- Assistant Professor: BITS Pilani K K Birla Goa Campus from June 2011 to June 2018 :: Department of Electrical and Electronics Engineering
- Lecturer: BITS Pilani K K Birla Goa Campus from Nov 2005 to May 2011 :: Department of Electrical, Electronics & Instrumentation Engineering
- Lecturer: Sun College of Engineering and Technology, Nagercoil from Sep 2002 to Nov 2005 :: Department of Electronics and Communication Engineering

Publications:

Journal Publications:

- Robert F., Prince A.A., Anita A. and Shibu C., (2018) 'Modeling and Analysis of Scalable Arcless Micromechanical Switch for Battery Powered Electrical System', Journal of Micro Nano systems, [accepted].
- Saif N., Valliappan C.A, Prince A.A. and Anita A., (2018) 'Time-frequency based feature extraction for the analysis of vibroarthographic signals', Computers & Electrical Engineering, vol.69, pp. 720-731.
- Saif N., Prince A.A. and Anita A., (2018) 'Entropy-based feature extraction and classification of vibroarthographic signal using complete ensemble empirical mode decomposition with adaptive noise', IET Science, Measurement & Technology, vol.12, pp. 350-359.
- Saif N., Sreekrishna R.R. and Prince A.A., (2016) 'Analysis of Knee Joint Vibration Signals Using Ensemble Empirical Mode Decomposition', Elsevier Procedia Computer Science, vol.89, pp. 820-827.
- Saif N., Aditya S., Prince A.A. and Anita A., (2016) 'Feature selection and classification methodology for the detection of knee-joint disorders', Computer Methods and Programs in Biomedicine, vol.127, pp. 94-104.
- Robert F., Shibu C., Anita A. and Prince A.A., (2014) 'Investigation of microelectromechanical switches for next generation DC power distribution system', International Journal Of Emerging Electric Power Systems, vol.15 (6), pp. 591-605.
- Chithra, Pallavi S., and Prince A.A. (2013) 'RF MEMS based biosensor for pathogenic bacteria detection', Springer Journal of BioNanoScience, vol. 3 (3), pp. 321-328.
- Venkateshvaran A., Prince A.A. (2012) 'A novel MEMS based current sensor design for smart grid applications', Journal of Sensors and Transducers', vol. 138 (3), pp. 2-13.
- Prince A.A., Jose I. and Agrawal V.P. (2012) 'A new optimal design and analysis method based on MADM for MEMS Products Development', International Journal of Advanced Manufacturing Technology, vol. 63 (9-12), pp. 851-661.
- Prince A.A., Jose I. and Agrawal V.P. (2012) 'Concurrent design, modeling and analysis of microelectromechanical systems products - Design for 'X' abilities', Journal of Micro Nano systems, vol.4 (1), pp.56-74 (19).
- Prince A.A. and Agrawal V.P. (2010) 'A group decision making aid for evaluation and optimum selection of Micro-Electro-Mechanical System (MEMS) products', Journal of Mechatronics and Intelligent Manufacturing, vol. 1 (1/2), pp. 3-24.
- Prince A.A. and Agrawal V.P. (2009) 'Structural modelling and integrative analysis of microelectromechanical systems product using graph theoretic approach', Journal of Microsystem Technologies, vol. 15 (7), pp. 1083-1096.

- Singh A., Prince A.A. and Agrawal V.P. (2009) 'Design optimization & comparison of RF power sensors based on MEMS', International Journal of Recent Trends in Engineering (IJRTE) Issue on Electrical & Electronics, vol. 1 (4), pp. 64-67.
- Prince A.A. and Agrawal V.P. (2009) 'Coding, evaluation, comparison, ranking and optimum selection of Micro-Electro-Mechanical System (MEMS) products', International Journal of Mechatronics and Manufacturing Systems, vol. 2 (1/2), pp.97–119.

Conference Publications:

- Gibin C.G., Sriyash C., Abhishek M., and Prince, A. A., Efficient Architecture for Implementation of Hermite Interpolation on FPGA', 12th IEEE Conference on Design and Architectures for Signal and Image Processing, (DASIP2018), October 10-12, 2018, Porto, Portugal, IEEE. [accepted]
- Praveen G.B , Anita A, Jainam S , and Prince A A, (2018) 'MediCloud: Cloud-based solution to patient's medical records', International Conference on ISMAC in Computational Vision and Bio- Engineering (ISMAC - CVB 2018), May 16-17, 2018, Palladam, India, Springer [accepted]
- Saif N., Valliappan CA., Gupta R., Prince, A. A., and Anita, A. 'Feature Extraction and Classification of Knee Joint Disorders Using Hilbert Huang Transform'. 14th Annual IEEE Conference of ECTI Society, (ECTI-CON 2017), June 27-30, 2017 Phuket, Thailand, IEEE.
- Prince A.A., Siram G., Verma P.K., George P. and Raju D. (2016) 'Efficient Implementation of Empirical Mode Decomposition in FPGA Using Xilinx System Generator', 42nd IEEE Industrial Electronics Conference (IEEE IECON2016), p.p. 895-900, October 24-27, 2016, Florence, Italy, IEEE.
- Sreekrishna R.R., Saif N. and Prince A.A. (2016) 'Real Time Cascaded Moving Average Filter for Detrending of Electroencephalogram Signals', 5th IEEE International Conference on Communication and Signal Processing (ICCSP'16), p.p. 0745 - 0750 April 6 -8 2016, Chennai, India, IEEE.
- Prince A. A. and Ardra S. (2015) 'FPGA Implementation of Second-Order Difference Plot for Epileptic Seizure Detection in EEG Signals', 12th IEEE INDICON, (E3 -C3), p.p. 1-5, December 17-20 2015, New Delhi, India, IEEE.
- Prince A.A. and Vineeth K. (2015) 'A Framework for Remote and Adaptive Partial Reconfiguration of SoC Based Data Acquisition Systems under Linux', 10th IEEE International Symposium on Reconfigurable Communication-centric Systems-on-Chip (ReCoSoC 2015), p.p 1-5, June 29th – July 1st 2015, Bremen, Germany, IEEE.
- Prince A.A. and Mishra S. (2015) 'Multi-Mode Electronic Stethoscope Implementation and Evaluation Using Dynamic Reconfigurable Design', 5th IEEE International Advanced Computing Conference (IACC 2015), p.p. 228 – 232, June 12th - 13th 2015, Bangalore, India, IEEE.

- Prince A.A., Verma P.K., Jayakumar C. and Raju D. (2015) 'Efficient Architecture for Real Time Implementation of Hilbert Transform in FPGA', 2015 IEEE International Conference on Electrical, Computer and Communication Technologies (ICECCT), p.p. 1-5, March 05th - 07th 2015, Coimbatore, India, IEEE.
- Robert F., Shibu C, Anita A and Prince A.A., (2014) 'Effect of Electric Field on Electrical Breakdown Arc Behavior of Micro Contact Gaps: A 3D Approach', 6th IEEE PES Asia-Pacific Power and Energy Engineering conference, p.p. 1-6, December 7th - 10th 2014, Hong Kong, IEEE.
- Robert F., Shibu C, Anita A and Prince A.A., (2014) 'Cross Tied Array of Electro-statically Actuated Micro-Electromechanical Switches for AC Circuit Breaking Applications', IEEE International Conference on Magnetics, Machines & Drives, p.p. 1-6, July 24th -25th 2014, Kottayam, India, IEEE.
- Prince A.A., Mangalgiri G. M. and Femi R. (2013) 'Electronic Circuit Design and Analysis of MEMS Current Sensor', Proc. Of International Conference on Emerging Technologies - Micro to Nano 2013, p.p. 187-188, February 23-24 2013, Goa, India.
- Prince A.A., Chithra and Pallavi S. (2013) 'RF MEMS based Biosensor for Pathogenic Bacteria Detection', Proc. Of International Conference on Emerging Technologies - Micro to Nano 2013, p.p. 173-174, February 23-24 2013, Goa, India.
- Harneet A., Prince A.A. (2011) 'MEMS-based Routers for OBS Network', Proc. Of National Conference on Electronic Technologies, pp. 87-90, April 15 2011, Goa, India.
- Sabne A. and Prince A.A. (2007) 'Embedded System Application in Robotics and Automation', Proc. Of National conference on Emerging Trends and Developments in Embedded Systems, Goa: India, March, 13-14 2007.

Chapters in books:

- Lal R.S., Prince A.A., and Iven J. "Novel Design for RF MEMS Capacitive Shunt Switch in K and Ku Bands", Power Electronics and Instrumentation Engineering. Springer Berlin Heidelberg, 2010. 1-9.

Research Projects:

- Principal Investigator: FPGA Based Fuzzy Logic Picomotor Controller for Laser Beam Pointing Stability Correction, BRNS :: 2 Years, April 2016- March 2018, and 24.46 Lakh.
- Principal Investigator: Design and Analysis of MEMS Switches for the Arc-less Operation and Control of Electric Energy Processing Systems, Additional Competitive Research Grant (BITS-Pilani) :: 2 Years, August 2015 – August 2017, and 7.50 Lakh.
- Principal Co-Investigator: Development of Remotely Configurable Arbitrary Ramp Generator for FMCW Reflectometry, PFRC-BRNS :: 2 Years, April 2017- March 2019, and 28.025 Lakh
- Principal Investigator: Hardware Implementation of Time Frequency Distribution of Mirnov Oscillations in Tokamak Using the Hilbert-Huang Transform, Board of Research in

Fusion Science & Technology (BRFST), Ahmedabad :: 2 Years, September 2012 – August 2014, and 22.58 Lakh.

- Co-Investigator: Analysis of Motherboard Manufacturing Process [Gigabyte make], D-Link Pvt. Ltd. Verna, India :: May 2006.

Courses Taught:

TelePresence Courses: Pilani, KK Birla Goa & Hyderabad campuses

- VLSI Architecture
- Reconfigurable Computing
- Hardware/Software Co-Design

On campus Courses

- VLSI Architecture
- Reconfigurable Computing
- Hardware/Software Co-Design
- Digital Design
- Digital Electronics and Computer Organization
- Microprocessor Programming and Interfacing
- Embedded Systems
- Microelectronic Circuits
- Electrical Sciences-I
- Electrical Sciences-II
- Electrical Sciences
- Measurement Techniques-II
- Digital Electronics and Microprocessor
- Analog Electronics
- Antennas and Wave Propagation
- Audio and Video Engineering

Students:

PhD Thesis Mentor:

- Neelam Srikanth, " IP Design for Reconfigurable Hardware Accelerator for Machine learning classifiers", In progress
- Gibin Chacko George, "Design and development of reconfigurable hardware accelerator for the analysis of reflectometry data", In progress
- Saif Dilavar Nalband, "Analysis and Classification of Vibroarthographic Signal Using Nonstationary Signal Processing Techniques", Thesis submitted

M.E. Thesis Supervised:

- Vineeth Kartha, "A Framework for Secure, Remote and Adaptive Partially Reconfigurable Data Acquisition System based on the Zynq Architecture under Linux", May 2015.
- Philip George, "Design and Implementation of an Efficient Architecture for Empirical Mode Decomposition", May 2013.
- Harneet A, "MEMS-based Routers for OBS Network", May 2011.

B.E. Thesis Supervised:

- Valliappan C.A., "Study of Broadband Reflectometry Data Using Non-Stationary Signal Processing Technique", May 2017.
- Tanmay Patil, "FPGA Implementation of Amplitude Variation removal using Cubic Spline Interpolation", May 2017.
- Bittu N., "Implementation of High Speed Electronics for Scanning Probe Microscopy", May 2017.
- Samyukta Ramnath, "Stereo Voice Detection and Direction Estimation in Background Music or Noise for Robot Control", Dec 2016.
- Riddhish Umesh Pandharkar, "Density Functional Theory based investigation on ACF material used for catalytic C-H bond activation", Dec 2016.
- Ardra Singh, "FPGA Implementation Of Second Order Difference Plot And Calculation Of 95% Confidence Ellipse Area", May 2015.
- Prakhar Kumar Verma, "Real Time Implementation Of Hilbert Huang Transform In FPGA", May 2014.
- Deepak Rishi, "Scalable models for Target Strength Estimation of Underwater Objects", May 2014.
- Subadeep B, "Micromirror Design for the Optical Routers", May 2011.

Administrative Experience:

- Head of Department, Electrical and Electronic Engineering from Nov 2017 to till date
- Faculty In-Charge, Placement Unit from Dec 2014 to till date.
- Team leader for Sandbox (procurement and management) from Aug 2015 till Aug 2017
- Nucleus member of Student Welfare Division (SWD) from May 2014 to Dec 2014
- Warden for AH-1 hostel from Jan 2014 to Dec 2015
- Nucleus member of Student Welfare and Admissions Division (SWD & A) from May 2009 to May 2014
- Non-resident warden for AH-1 hostel from May 2010 to Dec 2013
- Faculty coordinator for the annual technical festival "QUARK", BITS Pilani K K Birla Goa Campus for 2008, 2009, 2010 and 2011.
- Recourse person for the Intensive Teaching Workshop (ITW) 2009.
- Convener for the Departmental Committee on Academics (DCA), from Nov 2014 to Nov 2016
- Member of the Departmental Committee on Academics (DCA), from Nov 2014 to till date
- Member of Departmental Research Committee (DRC) Jan 2014 to Dec 2015 and Nov 2017 to till date
- In-charge of Reconfigurable computing laboratory from May 2012 to Feb 2014 and Nov 2017 to till date
- Faculty in-charge of EEE student association from May 2006 to June 2009

- In-charge of analog and digital lab from May 2006 to June 2009
- Member of departmental curriculum redesign committee for ECE, EEE & EIE

Recognition:

Professional Recognition:

- Best paper award for the paper "Embedded System Application in Robotics and Automation", National conference on Emerging Trends and Developments in Embedded Systems, Goa: India, March, 13-14, 2007.

Professional Contribution:

- Member, Programme Committee, ICETET, 2010
- Member, National Advisory Committee, ICE-CCN'13, 2013
- Member, National Advisory Committee, Ist ICETET, 2013
- Member, Programme Committee, 7th annual VLSI and Embedded Systems Symposium, 2013
- Member, Organizing Committee, ETMN, 2013
- Member, National Advisory Committee, NCOMN'14, 2014
- Member, International Advisory Committee, ICONECC2015, 2015
- Member, Technical Programme Committee, International Conference on Nanoelectronics, Circuits & Communication Systems(NCCS-2015)
- Member, International Programme Committee, International Conference on Sensors Engineering and Electronics Instrumental Advances (SEIA' 2015)
- Member, Technical Programme Committee, International Conference on Machine Intelligence and Signal Processing (MISP 2017)
- Member. Advisory Committee, ICAECC 2108

Invited Talks:

- Introduction to Reconfigurable Systems, PSN college of Engineering and Technology-Tirunelveli, 23 December 2015, Tamil Nadu, India.
- Recent Trends in Real Time Signal Processing and Communication, National Conference on Advances in Image Processing and Communication, 21 March 2014, Nagercoil, India.
- Applications of Reconfigurable Computing Systems, Marthandam College of Engineering and Technology, 19 March 2014, Marthandam, Tamilnadu, India.
- Custom CPU Design, in "Advaitha 2k8", Sahrdaya college of Engineering and Technology-Thrissur,12 March 2008, Kerala, India.

Membership of Professional Societies:

- Life member of Institute of Smart Structures and Systems (ISSS).
- Member of IEEE
- Member of VLSI Society of India (VSI)

Membership of Board of Studies:

- Member of Board of Studies (BOS), Faculty of Electrical and Electronics Engineering, Sathyabama University-Chennai, India.

Workshops:

Workshops Attended:

- Workshop under DST-FIST program on Cadence "Synopsys and Mentor Graphics", BITS Pilani K K Birla Goa Campus, May 16-20, 2016.
- Short Term Course on "Advances in VLSI Signal Processing", Indian Institute of Technology, Kharagpur, January 02-06, 2015.
- Workshop on "ARM - Xilinx SoC Lab-in-a-Box", Grand Sala Conference room, Hotel Cidade De Goa, Vainguinim Beach, Goa, India, and December 16, 2014.
- Advanced school on "Graph Algorithms", BITS-Pilani K.K. Birla Goa Campus, India, July 23-27, 2012.
- INUP Familiarization Workshop on "Nanofabrication Technologies", Indian Institute of Science, Bangalore, India, April 16-18, 2012, at Centre for Nano Science & Engineering.
- Workshop on "Introduction to MEMS", BITS-Pilani Goa Campus, India , December 21-24, 2010.
- Workshop on "High Performance Digital System Design (HPDSD)", BITS-Pilani, Rajasthan, India, February 16-18, 2009.
- Workshop on "Application of Advanced Tool/Techniques in Research", BITS-Pilani Goa Campus, India, March 6-7, 2009.
- International workshop on "MEMS Design Training Course", BITS-Pilani, Rajasthan, India, February-16, 2007, conducted by COVENTOR USA.
- Workshop on "ORCAD PSPICE", BITS-Pilani Goa Campus, India, November 18-19, 2006, conducted by Advance Micro Systems-Bangalore.

Hands-on Training:

- INUP Hands-on Training on Bio-Sensors, in Centre for Nano Science & Engineering at Indian Institute of Science, Bangalore, June 18-28 2012.