Anirudh Ashok Pise

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Education

University of Central Florida, Orlando, FL, USA May-2017
Master in Electrical Engineering (**GPA 4.0** I Semester)

Nitte Meenakshi Institute of Technology Bangalore, Karnataka, India May- 2013
Bachelor of Engineering in Electrical & Electronics

Skills

Power Electronics, Control System, Gate Drives, Snubbers, C/C++, Visual C, VHDL, MATLAB, Simulink, SIMPLIS, dsPIC, DSC/DSP, OrCAD, AutoCAD, Microcontroller, Arduino, ARM Processor, Pspice, LTSpice, TINA, Multisim, LabVIEW, Network Analyzer, Spectrum Analyzer, LASER Diodes, Analog Circuit Design, Digital Circuit design, Digital Signal Processing, Power Systems & Fiber-Optic Sensors

Experience

University of Central Florida, Orlando, USA Jan 2016-Present
Florida Power Electronics Centre
Graduate Student/Researcher

- Working on grid connected Single/Three phase μ-inverter based on GaN & SiC devices.
- Working on LLC converter based on GaN & SiC device

Florida Institute of Technology, Melbourne, FL, USA Aug 2015 - Dec 2015
Single Photon Detection- Semiconductor Devices
Research Assistant

- Generated sub-matrix which is part of "Giant Matrix" that contained system of equations used to model the avalanche photo-diode in MATLAB

Fiber Optic sensor Sep 2015 - Dec 2015

- Implemented real-time project using fiber-optic sensor to measure pressure and length using micro-bends in harsh environment (high voltage, EMI etc.)
- Designed the mechanical trap with SolidEdge
- Designed Transmitter & Receiver module using Pspice (Actual hardware was also fabricated)
- Programmed Arduino Uno to receive analog data, analyze & display

Raman Research Institute, Bangalore, Karnataka, India Mar 2015 – Jul 2015
Brain Computer Interface

- Designed protocol using Simulink to obtain data from g.tech bio-amplifier
- Established protocol for SSVEP experiments to study Brain-Computer Interface
- Performed signal processing on Arduino to determine evoked frequency
- Performed signal generation through digital ICs and routing using Xilinx CPLD (VHDL programming)
- Programmed microcontroller board to control various devices based on inter-integrated circuits concept
- Designed frequency generator based on digital potentiometers controlled by microcontroller
- Developed LED matrix board and drive
- Developed LED matrix control through Arduino to operate for SSVEP experiments
- Designed novel MOSFET based active electrode to tap EEG with LTSpice & Multisim
- Designed the PCB using Cadence OrCAD package with all SMD components
- Designed noise level using Dynamic Spectrum Analyzer (HP-3562 A)
- Determined S parameters using Network Analyzer (HP8711B) for antenna design

Independent Researcher funded by Central Government (India) & NMIT Jun 2012 – Feb 2015
Laser Induced Ignition System in Internal Combustion Engine

- Developed single cylinder engine to perform experiment.
- Developed optical plug to input the Laser beam
- Studied existing ignition system and developed a Capacitor Discharge Ignition unit which generated controlled amount of energy.
- Designed the Ignition timing circuit using Hall-effect sensors & microcontroller
- Received permission from combustion and spray laboratory at the Indian Institute of Science (IISC)-Bangalore to take peak pressure V/S crank angle curve
- Designed Laser head using CW & QCW high wattage Laser diodes
- Developed micro-controller based precision Laser chiller

- Designed Pulsed current source with 0-100A, 0-8v & 0-5kHz operation
- Simulated circuits with PSpice, LTSpice & LabView
- Developed capacitor bootstrap & transformer based gate drives
- Developed primary Current Limit based on Current Transformer and LM311 (Comparator)
- Developed Secondary Current limit based on Shunt Resistance & LM311
- Developed shutdown mechanism for threshold Current/Voltage limit
- Developed input under voltage lockout
- Developed snubber circuits for gate drive
- Designed PCB using Cadence OrCAD package
- Designed and developed Brook's Coil (Inductor) for ultra-low ripple current
- Developed Heatsinks using Autodesk/Solid-edge

Makarla Electronics, Bangalore, Karnataka, India June 2012 - Dec 2012

Intern (Manufactures custom power supplies for industries)

- Troubleshoot on Buck, Boost, fly back, T-type, Full/Half H-bridge converters & Resonant Converters
- Troubleshoot & Optimization of Gate Drives
- Analyzed & designed control topologies with Multisim & LabView
- Optimized gate drives for IGBT
- Programmed power converter & drives for periodic industrial application
- Troubleshoot thermal issues using Flir E60 IR camera
- Soldered SMD boards
- Assemble mechanical cases

CSA, Indian Institute of Science, Bangalore, Karnataka, India Dec 2011 - Jun 2012

Academic project- Automatic Sensing & Controlling of Electrical Loads over LAN

- Incorporated computer networks to communicate digitized control signals
- Developed graphical user interface using Visual C
- Developed microcontroller board with Cortex ARM processor to interface between computer & relays
- Programmed microcontroller in assembly to control Induction Motors (2 X 12KVA)

Nitte Meenakshi Institute of Technology Bangalore, Karnataka, India Jun 2011 - Nov 2011

Non-academic project- Electric Supercharger

- Developed a PWM based DC motor control
- Evaluated electrically supercharging of a single cylinder IC engine

Publication

- "DC-DC Converter for Pulsed Current Loads" (Single Author)
  Communicated with Resonance (http://www.ias.ac.in/resonance/)
- "MOSFET based active electrode for EEG" (Multiple Authors)
  Compiling Test Data

Honors

- Received funding from IEDC, Directory of Science & Technology, Central Government of India for project title " Laser Induced Ignition System in IC Engines"
- Received funding from Nitte Meenakshi Institute of Technology for project titled " Laser Induced Ignition System in IC Engines"
- One of best top ten projects at Jed-I project challenge (http://jed-i.in/challenge/2012/gallery/4)
- Academic project at prestigious Indian Institute of Science, Bangalore, Karnataka, India
- Visiting Student at prestigious Raman Research Institute, Bangalore, Karnataka, India

Co-curricular Activities

- Taught part time high school Mathematics & Science at a school for underprivileged
- Follow: IEEE Power Electronics, Industrial Applications, Industrial electronics & Power Delivery
- Professional Event Organizer & Master of Ceremony