# Adithya Ballaji

#13,1st Main, 2nd cross, Vinayakanagar Bagalur cross,
Yelahanka Bangalore – 560063, Karnataka
☎ 9738827023 ✉ adithyaballaji05@gmail.com


## Objective

- To impart quality education with emphasis on *Electrical and Electronics* Engineering along with *Advanced Power Electronics* thereby utilizing my skills and knowledge to improve and help the young and upcoming society in achieving their dreams.

## Summary


- A dynamic, team spirited and performance driven engineering professional with *International Publications* and a good blend of *MEP, testing & commissioning, design and manufacturing* industry knowledge. Ability to combine creativity in design with good business sense
- Strong decision-making, analytical, and scheduling skills together with technically-inclined thinking, excellent logical abilities and outstanding organizational skills through over one and half years of experience in MEP, testing & commissioning, design and effective customer management.


## Academic Details:

| Examination | Discipline/specialization | School/college | Board/University | Year of passing | Aggregate % / CGPA |
|---|---|---|---|---|---|
| **M.Tech** | Advanced Power Electronics | REVA University | REVA University | 2016-2018 | 9.3 |
| **B.E.** | Electrical and Electronics | Sir. M Visvesvaraya Institute of Technology | VTU | 2011- 2014 | 75.4% |
| **Diploma** | Electrical and Electronics | MEI Polytechnic | DTE | 2011 | 74.7% |
| **CBSE - 10th** | CBSE | Kendriya Vidyalaya, Air Force Station | CBSE | 2008 | 80.1% |

## Academic Projects:

**1. Title: Simulation and implementation of P & O MPPT algorithm using MAF for Photovoltaic System.**
**Period:** Jan – May 2018
**Abstract:** The rural electrification is still a major area of concern, here a novel MPPT algorithm is developed using a Moving average filter to eliminate the errors and oscillations present in the Perturb and observe MPPT thereby increasing the system efficiency and developing a photovoltaic charge controller for home lighting system with highest conversion efficiency.

**2. Title: Design and Implementation of Perturb and Observe MPPT algorithm for photovoltaic system**
**Period:** Sep – Dec 2017
**Abstract:** Perturb and Observe MPPT algorithm is one of the most widely used algorithms due to its ease of implementation. The P & O technique is analyzed and implemented for home lighting system and the results are analyzed, compared under different loads to inspect the drawbacks.

**3. Title: Design and development of buck converter for 9V DC motor**
**Period:** Oct- Dec 2017
**Abstract:** Buck converter is designed and developed along with voltage and current sensing circuits for electric vehicle applications. Here the buck converter was designed for 9V DC motor operation using the battery and Microcontroller to analyse the efficiency of the converter for EV applications.

**4. Title: Design and construction of linear buck converter using LM317 with variable input and constant output voltage**

**Period:** Oct – Nov 2017

**Abstract:** Design of a variable input and constant output voltage DC-DC linear buck converter for an input voltage varying between 3V-40V and a constant output voltage of 5V DC power supply is developed. The buck Converter is implemented using an integrated circuit(IC), LM317. The constructed buck converter was tested for load and line regulation cited in the datasheets for stability. The test and analysis for the linear buck converter was done using simulation and hardware setup.

**5. Title: Design and development of solar powered Buck Converter using MC34063 for 5V Battery Charging**

**Period:** Sep – Oct 2017

**Abstract:** Design and development of a solar power buck converter using MC34063 for 5V battery charging is constructed. The built prototype is a low cost, compact, and portable with good efficiency which can be easily built for even general application. The hardware implementation along with software and experimental results tested and validated.

**6. Title: Design and development of Boost converter using MC34063 for DC input LED driver**

**Period:** Aug – Sep 2017

**Abstract:** A Boost converter using MC34063 is designed and developed which has a input voltage of 12V and constant output voltage of 24V for driving a 7W LED light. The developed circuit is different from conventional boost circuit as it eliminates the need for MOSFET thus also gets rid of external circuit used for providing PWM pulses for switching and in turn making the circuit compact and minimizing the switching loses. It has advantages like high efficiency, fast response and good stability. The circuit is validated through a hardware model and experimental results show that the output of the converter is constant and effectively drives the load of 7W LED.

**7. Title: Design and implementation of a solar voltage regulator with PV cell for a closed loop system using PIC Microcontroller**

**Period:** Jan – July 2014

**Abstract:** Design and implementation of a DC-DC Boost converter with PV cell for a closed loop system with design of boost converter according to PV cell specification, and use of PIC microcontroller for duty cycle generation. The Solar PV voltage was able to track the reference voltage hence operate at maximum output

**8. Title: Modernization of Electrical Machines and Drives lab.**

**Period:** Jan – May 2011

**Abstract:** The industrial machines and drives lab is given a complete changeover with all the old DC Machines being replaced by the new AC machines and installation of the on board digital meters . The project was funded by the institution.

## International Publication:

**1. Adithya Ballaji[1]**, Akshith Monnappa[2] and Harshitha G.B[3], "**Design and development of boost converter using MC34063 for DC input LED driver**" *IJIRSET*, Volume 7, Issue 2, February 2018

**2. Adithya Ballaji[1]**, Akshith Monnappa[2] , "**Design and development of solar powered Buck Converter using MC34063 for 5V Battery Charging**" *International Journal of Current Research,* Volume 10, Issue, 02, February 2018

**3. Adithya Ballaji[1]**, Akshith Monnappa[2], "**Design and construction of linear buck converter using LM317 with variable input and constant output voltage**" – *IJIRSET*, Volume 7, Issue 4, April 2018

**4. Adithya Ballaji[1],** Nagaraj Hediyal[2], Dr. Rajashekar P Mandi[3], K Narayana Swamy[4] "**Design and Implementation of Perturb and Observe MPPT algorithm for photovoltaic System**" *IJERA*, Volume 8, Issue 4 April 2018

**5. Adithya Ballaji[1],** Harshitha G.B[2]**, "Design and Development of Buck Converter for 9V DC motor"** *IJARTET*, May 2018

## Personal traits that I can bring to the Institution:

- Presentation of subject or topic in a clear and logical sequence
- Making the Subject or topic accessible, intelligible and meaningful
- Cover the subject matter adequately
- Being constructive and helpful in their criticism
- Relating the theoretical topics with industrial examples

- Pace the lecture appropriately
- Include material not readily accessible in textbooks
- Illustrate the practical applications of the theory presented
- Show enthusiasm for the subject
- Generate curiosity about the lecture material early in the lecture.
- Teaching from the industrial point of view so that students are industry ready

## Hardware and Software Skills:

| SL.NO | SOFTWARE / HARDWARE SKILLS | DESCRIPTION |
|---|---|---|
| 1 | SOLIDWORKS | 2-D drawing and drafting with 3D Modeling |
| 2 | MatLab R2013a | Converter design and simulation using Simulink, scripting in editor for graph plotting, arithmetic operation, Filter simulation. |
| 3 | MPLab IDE | Program writing, running and building |
| 4 | Proteus 8 professional | Simulation, PCB and Circuit Design |
| 5 | AutoCAD | 2D drawing and Wiring layout design |
| 6 | OrcadPspice | Design and simulation IC's for datasheet verification, Converters |
| 7 | PSIM | Circuit Building and testing |
| 8 | MS Office | Diploma in office automation |
| 9 | Requirement analysis | Selection of components based on design using data sheets |
| 10 | PCB Soldering | Electrical and Electronics Circuit building on PCB boards |
| 11 | Test and debugging | Fault and debugging of electrical and electronics circuit |

## Professional Experience:

**Synergy Properties Development Pvt. Ltd Bangalore, India,** **December 2014 – August 2015**
***Mechanical, Electrical & Plumbing Engineer, (MEP)***
***Testing & Commissioning***

***Projects Undertaken:***
*1. Flip kart, G+11 Floors, Cesna Business Park*
*2. Rolls Royce, Phase 1 & 2, C – Block, Manyata Tech Park*
*3. DynCorp International, D - Block, Manyata Tech Park*

***Responsibilities:***

- Manage smooth commissioning of the project by Coordinating between the company and the Contractor
- Supervise and approve commissioning plans in accordance with project guidelines.
- Review designs of Electrical lighting, Power layout, HVAC & Networking and supervise onsite commissioning activities.
- Prepare and maintain commission records of site observations, testing processes and checklists.
- Monitor installation, submittals and usage of engineering tools adhering to project and commissioning guidelines.
- Guide testing processes and motivate specialists to achieve standard results and Assist with identification and redressal of commissioning and malfunction issues.
- Attain customer satisfaction through adhering to owner guidelines with the entire project team.

***Project Coordinator:***

- Attend client meetings and assist with determination of project requirements.
- Prepare project organization and communication charts.
- Chair site meetings and distribute minutes to all project team members.
- Track the progress and quality of work being performed by design disciplines/trades.
- Effectively and accurately communicate relevant project information to the client and project team.
- Ensure client's needs are met in a timely and cost effective manner.

**Wirtz Manufacturing Co, Bangalore, India** **August 2015 – Feb 2016**
***Electrical & Mechanical Design Engineer***

***Responsibilities:***

- Electrical Design in AutoCAD 2014.
- Mechanical Design and Assembly in Solid Works 2015.
- Vendor Development to improve supplier's performance and capabilities to meet firms supply needs.
- Quality Inspection of mechanical machine parts and electrical equipments.
- Testing and commissioning of equipments.
- Communication and client interaction regarding design Issues.

## Internship:

***Trainee***, **POWER PLUS Pvt. Ltd, Bangalore, India** **Oct 2011**

- 3 day workshop on assembly work of fixing of meters like ammeter, indication lamps and wiring of single feeder meter panel.
- Familiarized with assembly, fabrication and bus-bar work of LT control panel.

***Trainee***, **Deepak Electricals (Govt. Licensed Class 1 Electrical contractors), Bangalore, India** **Dec 2009**

- 1 week industrial training in installation of switch socket outlets, point wiring, installation of light fixtures, laying of cables.
- Continued maintenance of electrical infrastructure at locations such ***Powerica Ltd***. Bommanahalli, ***ACS College of Engineering,*** Mysore Road, and ***GKVK Campus***, Hebbal.

***Trainee***, **Absotherm Services Pvt Ltd, Bangalore, India** **May 2009**

- 1 week industrial training on supporting day to day electrical maintenance activities.
- Monitoring of electrical utilities such as Generator, pumps, LT Panel and light fixtures & fitting on residential apartment buildings.

***Trainee***, **eNLiven Technologies** **Aug - Dec 2017**

- Skill development program in "**Microcontroller and power electronic devices application**", circuit design using Orcad Pspice, Simulation using MatLab, PCB design using Proteus 8 Professional, requirement analysis, circuit development and soldering using PCB board, testing and debugging of electrical and electronic circuits.

## Trainings:

- Skill Development and certification course on "**Microcontroller and power electronics device applications**" from **eNLiven Technologies**.
- 2 Day **Industrial Automation** workshop conducted by Prolific Systems & Technologies Pvt. Ltd. organized by Department of Electrical & Electronics Engineering , Sir M Visvesvaraya Institute of Technology, September 2012
- 2 Day workshop on Power **Electronics using PSpice™** conducted by Department of Electrical & Electronics Engineering, Sir M Visvesvaraya Institute of Technology, April 2012.
- **Diploma in Office Automation** which includes expertise is MS Office.

## Awards and Achievements:

- Presented Project on "**Simulation and Implementation Perturb and Observe MPPT using MAF for PV system**" in **REVA Expo -2018**
- Attended National Conference on **"Advanced Computing Technology and Applications"** NCACTA – 2018
- Secured **2nd position** in 1st year M.Tech , 2017
- Attended workshop on **"An overview of Signals, System and Digital Signal Processing"** at VIT, Vellore, 2017
- Attended workshop on **"Challenges and operation of Micro grid systems in Indian Power Scenario**" Bangalore, 2017.
- Secured 2nd position in **AutoCAD** in semester end exams, July 2013
- **Runners up** in inter college **English Debate** (science vs religious beliefs), held at MEI Polytechnic, Bangalore, 2010

## Subject and Area of Interest:

- **Electrical** : Electrical Measurements, Electrical power generation, Transformer and Induction Machines, Switchgear, Machine Design, Transmission and Distribution, DC machines, Electrical Design and Estimation, Energy auditing, Electrical Power Utilization, High voltage engineering, HVDC Transmission.
- **Electronics** : Analog Electronic Circuits, Power Electronics, Modern control theory,
- **Advanced Power Electronics:** Power Quality, DC-DC Converter, Multilevel inverter, Electric Vehicle, FACTS controller, Power Semiconductor devices.
- **Area of interests** : Solar Energy, Maximum power point tracking, PV charge controller, rural electrification, converters

## Personal Information:

| | |
|---|---|
| **Date of Birth** | : 23rd September 1991 |
| **Nationality** | : Indian |
| **Languages known** | : English, Hindi, Kannada, Tamil |
| **Strengths & Qualities** | : Out of the box thinking, hard working, dynamic and decision making skills, flexible and Adaptability, Desire to teach, Quick learner, Stress tolerance, creating a positive work environment, good communication and writing skills. |

**Declaration**

I hereby declare that the above mentioned detailed information is true to the best of my knowledge and belief.

**(ADITHYA BALLAJI)**