



Ujwal V

ujwalmadhu@gmail.com

<https://www.linkedin.com/in/ujwal-vijay-kumar-a115aa65>

+91 9945073974

PROFESSIONAL SUMMARY

- Experienced Electronics Engineer with a mentoring background
- Passionate to develop medical and assistive devices to improve quality of life
- Developed battery-operated wired headphones using Bone-Conduction technology for visually impaired

ACADEMICS

Degree	Organization	Board	Year	Aggregate
Post Graduation - Master of Technology				
M.Tech [Biomedical Signal Processing & Instrumentation]	BMS College of Engineering	Autonomous [Affiliated to VTU]	2016-18	9.47 CGPA
Graduation - Bachelor of Engineering				
B.E [Electronics and Communication]	Vidya Vardhaka College of Engineering	VTU	2012-16	74%

PROJECTS

Title	Description
Robert Bosch Engineering and Business Solutions, Pvt. Ltd. India (RBEI)	
MICRO INVERTER September 2020	An advanced solar inverter with higher efficiency and better MPPT that can be used with a 250W Panel. Circuit design, simulations, and evaluation.
30W PORTABLE AMPLIFIER - PA SYSTEM January 2019 - June 2020 16 Months	A Class D Portable Amplifier that delivers 30W output on a 40hm Speaker and 1V Line Output. Limiter circuit design, derating calculation, system evaluation, pre-compliance (EMI/EMC), FMEA, Focus Analysis Matrix.
CIRCULAR SAW - POWER TOOLS September 2018 - January 2019 5 Months	PoC development of safety mechanism based on capacitive sensing. Circuit simulation, booster & voltage doubler circuit design, and system integration.
Post Graduation - Master of Technology	
AN ALTERNATIVE LISTENING DEVICE FOR THE AUDIBLY IMPAIRED January 2018- May 2018 5 Months	Developed a listening device using the Bone Conduction technology with Filter-free class-D amplifier and surface transducer being the core of the device.
ASSISTIVE DEVICES FOR THE DIFFERENTLY ABLED August 2017- May 2018 9 Months	Battery-operated wired headphones developed using Bone Conduction technology. This device was developed to be integrated into the M.P.A.S and also to work as a standalone.
M.P.A.S - MULTI POINT AUDIO SWITCH November 2017- April 2018 5 Months	Product developed for the visually impaired as part of Bosch CSR initiative. Improved sound quality by scrutinizing low noise op-amps and controlled gain feedback. Won the NASSCOM - Tech for Good award.
SIMULINK MODELLING OF THE RESPIRATORY SYSTEM September 2016- December 2016 4 Months	Analyzed the working of the human respiratory system through Simulink modeling and delineated an analogy between the working lungs and a ventilator.

Title	Description
Graduation - Bachelor of Engineering	
AN APPROACH TO DETECT PESTICIDES USING COLORIMETER September 2015 - May 2016 9 Months	Developed a portable pesticide detector using the concept of colorimetry which consists of RGB LEDs and a photodiode to detect the presence of pesticides and a microcontroller to calculate its concentration.
DETECTION OF POWER QUALITY DISTURBANCES USING MATLAB December 2014 - April 2016 5 Months	Generated various fluctuations that arise on a power line using MATLAB and analyzed the faults using wavelet transforms on Simulink.

TECHNICAL PAPER PRESENTATIONS

- **MEMRISTOR –The Future** - Impulse, by IEEE WVCE, Mysuru
- **Detection of Power Quality Disturbances** - Impulse, by IEEE WVCE, Mysuru
- **An Approach to Detect Pesticides using Colorimeter** - 3rd NCETEC, by BGS Institute of Technology
- **An Alternative Listening Device for the Audibly Impaired** - Jagruti - 4th All India Youth Conference, IISc Bengaluru
- **Design and Development of Assistive Devices for the Differently Abled** - Paper accepted at ICEECE, KNSIT, Bengaluru, 2020

PUBLICATIONS

- **An Approach to Detect Pesticides using Colorimeter** - ISRASE eXplore Digital Library, 2016

TOOLS

- Simulation Tools: LTSpice, TINA-TI, Simulink
- FMEA: IQRM
- CAD Tools: OrCAD, EAGLE, Altium
- Arduino IDE, Code Composer Studio
- MATLAB
- nRF5-SDK, STM32Cubemx, BERYL
- TI's BQ Studio

WORKSHOPS

- Altium CAD tool
- Worst Case Analysis Calculation, HALT
- Biomaterials & its Applications
- Android Arduino Robotics & Python workshop
- Soldering and Etching

HOBBIES AND INTERESTS

- Travelling & Photography
- Playing Piano & Badminton

AWARDS

- 3rd place in Jagruti - 4th All India Youth Conference - IISc, January 2020
- Star performer - Bosch, 2019
- Shabaash - Bosch, 2019
- 1st place in Cimethon - BMSCE, September 2016
- 3rd place in Vivacious Project Exhibition, Pesticide detection using Colorimeter WVCE, April 2016
- Best Paper award for Detection on Power quality Disturbances - WVCE, September 2015
- Best Project - Wireless Switch, WVCE, March 2015

EXTRACURRICULAR

- Volunteer at INDICON 2016 – IEEE Conference at IISc, Bangalore
- WIE Chairperson of WVCE IEEE SB
- Organized a state-level 2-day event under IEEE WIE in 2015
- Organized annual technical fest IMPULSE 2014 and 2015 of Electronics and Communication Dept., Vidya Vardhaka College of Engineering

ADDITIONAL PROJECTS

- NTC & Thermopile based sensor screw
- 1000W Booster Amplifier
- EXACT12 - Screwdriver
- BT based heart rate monitor
- Wireless Switch