BARKHA BUNKAR
(813)-812-2800 | Email: Barkha.10bunkar@gmail.com
Linked in- http://www.linkedin.com/in/barkhabunkar

SUMMARY

- Strong knowledge in Electrical Embedded System Product Design and Development.
- Excellent Knowledge of Communication protocols: UART, SPI, I2C protocols.
- Good skills in PCB Designing, microcontrollers, microprocessors, wiring diagrams, electrical schematics, MATLAB, SIMULINK.
- Ability to develop Embedded Software, debug and test a model.
- Skilled in analyzing, interpreting the readings and schematics of a design model.
- Good work ethics in communicational and organizational skills within the team.

SKILLS

- **Software:** MATLAB, SIMULINK, Cadence, Xilinx ISE, Keil µ vision, Microchip MPLAB IDE, MS Office, Eagles, KiCad.
- **Microprocessors and Microcontrollers**: PIC16F, PIC18F, Arduino, Intel 8085 & 8086, 8051 and ARM Processors.
- **Operating Systems**: Windows, Macintosh and Linux.
- **Technical**: C, Embedded C, Basic Python, AutoCAD, familiar with Git, Basic VHDL and Verilog, PCB Designing.
- **Protocols**: UART, SPI, I2C, CAN and Bluetooth.

EDUCATION

Master of Science in Electrical Engineering **GPA:3.88** Expected May 2019
University of South Florida, Tampa, FL, USA
Bachelor of Engineering in Electronics and Communication Engineering **First Class with Distinction**, 2016
AMC Engineering College, Bangalore, India
Relevant Courses
System and Control theory, Embedded systems, Fundamentals of C programming, Microcontroller, Microprocessor.

ACADEMIC PROJECTS

Automated Speed Control of Vehicle in speed limit zones prototyped using RF module. (FALL 2018)
- Designed a working prototype that demonstrates speed control at sensitive zones using PIC18F45K50 microcontroller.
- Bluetooth remote module to control the vehicle, RF module to create zones and LCD display for outputs.
- Speed of the motor was reduced by using PWM triggered as a response to an RF transmitter.

Optimal State-Space Controller for Power Switching (Buck) Converter using State space Approach. (SPRING 2018)
- Designed and simulated the DC-DC (Buck) converter using state space approach.
- Modified open loop system to closed loop system using PI Controller and LQR technique to achieve desired KPIs such as settling time, rise time, peak overshoot and steady-state error.
- This project was implemented and verified in MATLAB and SIMULINK software.

Design & Simulation of Digital PID Controller for Open Loop & Closed Loop control of Buck converter. (SPRING 2018)
- This project was able to enhance transient and steady state performance of buck converter using PID controller.
- This project was implemented and verified in MATLAB and SIMULINK software. The result of this project was able to get regulated output at minimal steady state error.

Synthesis of Carbon Nanotubes from Non-Biodegradable Plastic Bags. (SPRING 2018)
- As a team we studied Synthesis of CNT and two methods for synthesis was compared i.e. Using catalyst and Using NAAM's membrane. Environmental effects of both the method were evaluated and LCA was performed using SimaPro software.

RESEARCH EXPERIENCE

Independent Study-University of South Florida (SPRING 2019)
• Ongoing Research on Thermochromic and Electrochromic Smart glasses.
Working on Design of Energy Efficiency Buildings to save overall power consumption (Energy Audits) (SPRING 2019)
• Currently working for "**Florida Fish and Wildlife Research Institute**" in Saint Petersburg, Florida: Recommending energy saving measures, conducting energy usage data calculations, and completing related tasks as assigned.

CERTIFICATION AND AWARDS

- Certification for Customer technical training workshop on Microchip PIC18 by Apsis Solutions, Bangalore.
- Attended workshop on "ARM Processor & its Applications" at AMC Engineering College, Bangalore.
- Attended workshop on PIC18 Processors & Peripherals at AMCEC, Bangalore.
- Achieved 3rd position (Bronze Medal) at all India level in Firing in Thai Sainik Camp (TSC) in New Delhi, India.
- Passed Certificate" A" Examination of National Cadet Corps (NCC) under the Government of India.