

CONTACT

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GITHUB:

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YOUTUBE:

<https://www.youtube.com/siddharthlh>

LINKEDIN:

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PROFICIENCIES

Embedded Systems

ARM (STM32, cortex M4f)

Arduino, NodeMCU, Raspberry Pi

RTOS: Keil RTX5

Automotive software

Static analysis: MISRA, HIS, CERT

Aspice standards

Internet of Things

Time synchronous wireless

Networks (ADI wireless BMS)

Sockets: TCP, UDP, MQTT

Signal and Image processing

Spectral and Wavelet analysis

Python OpenCV

Tools & Programming Languages

Matlab

Multisim

Cadence Virtuoso

Synopsys Coverity

NodeRED Toolkit [IBM]

C, Python

LANGUAGES

English, Hindi , Tamil, Kannada,
(some very basic French)

HOBBIES

Photography

Badminton

Upcycling old hardware

SIDDHARTH L HASANABADI

EDUCATION

North Carolina State University , Raleigh (USA)

M.Sc Electrical Engineering

August 2023 – to date

VIT University, Vellore, Tamilnadu (India)

B.Tech Electronics and Communication Engineering

2017-2021

CGPA: 8.99/10

PROFESSIONAL EXPERIENCE

Embedded Software Developer, Analog Devices India [intern + full-time]

Jan 2021- Aug 2023

Worked on revolutionizing (modular & scalable) EV technology through a Wireless Battery Management Systems (wBMS) across platforms. Worked on the development and debugging of a multi-hop, time-synchronized network stack, using ARM-based low-power SoC with integrated radio—contributions productized in 2022 GMC EV Hummer and more.

Worked on:

- Worked on integration of an Environment aware channel selection method that dynamically adapts to multipath and external RF interference. Presented at ADI India Technical Conference(ADI iTec).
- Developed a Static analysis framework to cull new vulnerabilities at the Pull Request level.
- Ideated and implemented improved wireless Packet formats to support inter-version interoperability.
- Designed and implemented the integration of key wrapping to prevent plaintext storage of encryption keys.

INTERNSHIPS

Vision-based docking system for Spacecrafts [L&T Aerospace Design Centre]

Developed a prototype that uses only one 2d camera, to calculate the 3d position and orientation of the target satellite. Created a custom LED pattern, with a detection mechanic that can help to estimate the entire 6dof pose using Perspective-n-point with just one frame of image capture.

Demo: <https://youtu.be/RGoBDAEkDBU>

Predictive maintenance for CNC machines [L&T Precision Manufacturing Facility]

Developed a method to identify damage and time to failure of bearings in CNC spindle. Developed a POC to track bearing fault frequencies at constant rpm using spectral analysis from a surface-mounted accelerometer.

PROJECTS

Audio Steganography using FFT and Modulation (Signal processing: MATLAB)

Developed an application that uses convolution to encrypt speech and hides it by modulating it beyond human hearing range.

Time-optimized garbage disposal system (Statistics and IOT: Python, K means classification)

Developed a method that ensures optimized number and timing of garbage collection trips using temporal clustering and route optimization.

Motion-based game control (Image processing: Python OpenCV, Unity3d)

Developed a python application that tracks player horizontal movement through webcam and translates it to player movement in a mini tennis game. Video: <https://www.youtube.com/watch?v=mQiQYkRC940&t=1s>

EXTRACURRICULAR ACTIVITIES

Awards and certificates(Analog Devices):

Presented paper at ADI India Technical Conference (iTec).

Received spot awards for enabling ASPIICE compliance and automating continuous integration processes for automotive software, and critical assistance in POC development.

Analog Devices Young Professionals Network

Conducted mobile photography workshop.

Member of ADI Toastmasters Club. Represented ADI Bangalore at the Area level.

Vellore Institute of Technology

Presented a talk on “Intelligence at the Edge” (Alumni guest lecture)

Organized and promoted several electronics/IOT workshops, as member of the IEEE VIT student chapter