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| Contact PHONE:  +1 615-881-1803  EMAIL:  siddharthhasanabadi@gmail.com  GITHUB:  https://github.com/siddharthlh24  YOUTUBE:  https://www.youtube.com/siddharthlh  LINKEDIN:  www.linkedin.com/in/siddharth-hasanabadi 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)** August2023 – to date  M.Sc Electrical Engineering  **VIT University, Vellore, Tamilnadu (India)** 2017-2021  B.Tech Electronics and Communication Engineering CGPA: 8.99/10 PROFESSIONAL EXPERIENCEEmbedded Software Developer, Analog Devices India [ intern + full-time ] Jan 2021- Aug 2023Worked 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.  InternshipsVision-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 usingPerspective-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. ProjectsAudio 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 ASPICE 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 Banglore 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 |
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