RAHUL NARASIMHA

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EDUCATION

University of Michigan   **Ann Arbor, MI**
PhD, Electrical Engineering and Computer Science   2023 - 2028
Advisor: David Blaauw
Topic: Low-Power Analog, Digital, Mixed Signal Circuits and Systems.

R.V. College of Engineering   **Bangalore, India**
Bachelor of Engineering, Electronics and Communication   2016 - 2020

WORK EXPERIENCE

Infineon Technologies (*Formerly Cypress Semiconductors*)   **Bangalore, India**
Electrical Design Engineer, Connected Secure Systems (CSS)   2020 – 2022
- Contributed to design of Medium Access Control layer architecture for 802.11ax.
- Contributed to RTL design of WPA and WAPI encryption engine design.
- Design and Verification of Target Wake Time (TWT) module.
- Redesigned memory wrapper to migrate from pseudodual port to single/dual port memory

MILE Lab, Indian Institute of Science   **Bangalore, India**
Research Intern   2019
- Developed algorithm for pre-processing of Electroencephalogram (EEG) data for epoch-wise data extraction aimed at reducing acquisition and filtering artefacts.

RESEARCH

Neural Recording and Stimulation (Ongoing)   2024

RF Transmitter for Localization (Ongoing)   2023
- A cm-scale, PLL based RF transmitter for global localization using LEO Satellites.

COURSE PROJECTS

Ring Oscillator based Physically Unclonable Function (PUF)   Fall 2023
- A phase-frequency-detector based architecture with a current controlled ring oscillator focused on temperature compensation for frequency is used to generate 16 bit PUF.

Seizure Detection and Closed Loop Control.   Winter 2023
- Closed loop control is demonstrated using a Simulink model that incorporates artefact mitigation and synchronized control based on the 2D rate model for epilepsy.

Closed loop Automated Gain Control (AGC) Amplifier   Fall 2022
- Designed an AGC in 130nm CMOS based on a feedback architecture with an input dynamic range of 60dB.

Acquisition and Processing of Bio signals (Undergraduate)   2019
- Realized dual channel EEG analog front end using discrete components for acquisition of the alpha band. The setup was demonstrated using variation in attentiveness.
- Multimodal EMG / EOG acquisition circuit was implemented.

RELEVENT COURSEWORK

University of Michigan
Analog: Monolithic Amplifier (Prof. Afshari) , Analog IC Design (RF) (Prof. Wentzloff)
Mixed Signal: PLL Design (Prof. Flynn), A/D Interfaces Design (Prof. Flynn)
Digital: VLSI Design (Prof. Zhang)
Biomedical: Biomedical Instrumentation (Prof. Opri), Neural Engineering (Prof. Chestek)

R. V. College of Engineering
Digital: Digital Design - Verilog (Lab), Digital VLSI Design (Lab), Design for Testability
Analog: Analog Microelectronics, Analog & Mixed Signal IC Design.

RELEVENT SKILLS

Design tools: Virtuoso, Spyglass, Questasim, Cadence NCsim, Verdi, MATLAB,
LabVIEW, TINA-TI, Autodesk Eagle.
Languages: Verilog, VHDL, C, Python.