# Kashyap Ravichandran

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## EDUCATION

**North Carolina State University**                                                                    **May 2021**
Master of Science Candidate - Computer Engineering                                             4.06/4.0
Relevant Coursework: Micro Architecture, Embedded Systems, Operating Systems, Algorithms and Optimization, and ASIC Design

**SSN College of Engineering, Chennai, India**                                              **May 2019**
Bachelor's in engineering – Electronics and Communication                                    8.36/10.0

## TECHNICAL SKILLS

**Languages:** C, C++, Python and Embedded C
**Software & Tools**: Cadence Allegro, Cadence Spectre, Keil uVision, AutoCAD, Arduino, Raspberry Pi, git, CUDA
**Proficient In**: Designing Linux based Embedded Systems, PCB Design, Building ARM based Embedded Systems, RTOS

## INTERNSHIPS

**IIT Madras**, Chennai, India                                                        May 2018 – September 2018
*Research Fellow*
- Engineered the hardware and firmware for Take Note, a note-taking device for the visually impaired, available in South East Asian and African markets.
- Designed a software prototype for "Take Note" using python that translated braille into English and Tamil.
- Recognized as IIT Madras' Python Conference keynote speaker to present the product and accompanying software for over 500 people.

**IBM India**, Bangalore, India                                                      November 2017 – January 2018
*Intern*
- Formulated a machine learning model using IBM's cloud services that was able to classify whether logos were fraudulent or authentic.
- Published documentation for 2 IBM Watson IoT Services by analyzing their functionality, identifying their usage and their use case scenarios.
- Inducted into IBM's Developer Champions Group to represent IBM in various institutions going forward.

**Syrma Technology**, Chennai, India                                                    May 2017 – June 2017
*Intern*
- Streamlined the company's production by automating their PCB assembly line that reduced the output fault rate.
- Devised a system to thaw frozen solder paste that reduced human error by 75%.

## TECHNICAL PROJECTS

**Simulation of a Skipper Type Microprocessor**                                        March 2020 – April 2020
*Microarchitecture – North Carolina State University*
- Increased the IPC of an Out of Order Processor by skipping over a difficult branch and fetching the correct instructions when its resolved.

**Dynamic Instruction Scheduling**                                                      November 2019
*Microarchitecture – North Carolina State University*
- Simulated the execution of an out of order superscalar processor with Reservation Stations and Re-order Buffers using a C++ program.
- Studied the effects of the Reservation Stations' size and bandwidth of the processor on the IPC.

**Controlling a LED Using a Multitouch Touch Screen – RTOS**                            November 2019
*Embedded Systems Architecture – North Carolina State University*
- Programmed an inter-communication mechanism to share hardware resources between multiple threads, to increase responsiveness and reduce idle time.

**Cache Simulator**                                                          September 2019 – October 2019
*Microarchitecture – North Carolina State University*
- Analyzed the performance of a memory hierarchy simulator with L1 and L2 n-way set associative cache and L1 n-way set associative and a de-coupled sectored L2 cache.
- Observed the effect of cache and block size as well as associativity on miss rate and average access time.

**Assault Detection**                                                                   September 2018
*Yet Another Hackathon!, Sri Venkateswara College of Engineering, Chennai*
- Ideated and implemented a system within 24 hours to detect physical assaults, falls and accidents using Raspberry Pi, gyroscope and accelerometer.
- People's Choice Award Winner.

## Publications

Bharath Raj, N., Subramanian, Anand., Ravichandran, Kashyap., Venkateshwaran, N. (2020). Exploring Techniques to Improve Activity Recognition using Human Pose Skeletons. *The IEEE Winter Conference on Applications of Computer Vision (WACV) Workshops*. Snowmass Village, Colorado: IEEE.