

# NAGA VS RAVITEJA CHAPPA

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## SUMMARY

A highly motivated and aspiring doctoral student with a focus on Computer Vision/ Machine Learning/ Autonomous Embedded Systems, eagerly looking for an opportunity to tackle challenges in all aspects of computer vision applications including human behavior analysis and image segmentation.

## EDUCATION

Doctor of Philosophy, Computer Engineering  
University of Arkansas Fayetteville - GPA:3.73

📅 Jan 2021 - May 2025    📍 Fayetteville, Arkansas

Masters of Science, Electrical and Computer Engineering  
Purdue School of Engineering and Technology- GPA: 3.47

📅 May 2020    📍 Indianapolis, Indiana

## EXPERIENCE

Research Assistant

Computer Vision and Image Understanding Laboratory

📅 January 2021 - Present    📍 Fayetteville, Arkansas

- Working towards the development of deep learning algorithms for *behavioral analysis* in the task of *Group Activity Recognition (GAR)* which is a part of *Autism Children Group Behavior Analysis* project. Also have hands-on experience working on Image deblurring techniques, Image segmentation and domain adaptation methods.
- My work based on self-supervised approach for GAR using Volleyball and NBA datasets is accepted to CVPRW 2023, Vancouver, Canada. Currently, I have two submissions for CVPR 2024 in the topics: action retrieval and video scene graph generation.

Research Assistant

IoT Collaboratory

📅 January 2019 - May 2020    📍 Indianapolis, Indiana

- Worked towards the enhancement of accuracy and training speed for Neural Network Architectures using PyTorch Framework along with its implementation on NXP iMX-RT1060 EVKB and NXP BlueBox. I developed ADAS systems using these enhancements and also worked with Radar and Lidar sensors integration and simulation.

Instrumentation Engineering Intern

Defence Research Development Laboratory

📅 May 2017 – July 2017    📍 Hyderabad, India

- Project titled "Measurement of C-type Thermocouple Using K-type Signal Conditioning Unit" is done on MATLAB by using the standard thermocouple datasheet to obtain the respective thermocouple co-efficients, which are helpful for the conversion of one thermocouple output to other. Performed Static Analysis, Unit testing and Integration testing of this software.

## TECHNICAL SKILLS

C/C++, Embedded C, Python ●●●●●  
Verilog/System Verilog, VHDL ●●●●●

## SOFTWARE SKILLS

- Pytorch, Tensorflow
- NXP S32DS, MCUXpresso, Eclipse, Keil uVision, Multisim
- Git, Jira, Jenkins, Bitbucket
- MATLAB and Simulink- MBDT Toolbox
- Microsoft Visual Studio, MS Office
- Xilinx SDK, Vivado, ISE
- LabView, MentorGraphics, Solidworks
- Linux OS (Fedora/Ubuntu/CentOS)

## PROJECTS

Alexa Controlled Drone Using Amazon Web Services

- Used NXP LPC54018 IoT module and iMX-RT1060 microcontrollers for reading the voice input and controlling the drone respectively.
- Implemented CAN protocol for the communication between microcontrollers.

Implementation of YOLOv3 using Bluebox and RTMaps

- Built and tested YOLOv3 using Tensorflow framework on RTX 2080Ti GPU.
- Then implemented the same model on NXP Bluebox using RTMaps software.

Wearable Smart Home Ecosystem

- NXP Rapid IoT board senses the air quality, temperature and humidity.
- Atmosphere IDE is used to program Rapid IoT board, phone application and integrate the board to Amazon Web Services (AWS).
- Interfaced Raspberry Pi and NXP KW41Z boards for low power thread mesh network.

Design and Implementation of Music Synthesizer

- Built a music keyboard on Zynq-7000 board with different buttons assigned with different audio frequencies using channel equalization.
- Controlled the gains of audio inputs from multiple sources using Xilinx Vivado and Xilinx SDK.

EMC Testing for an Automotive ECU

- Built a testing unit using modeling of signal processing and digital communications in Matlab. Later, developed the same unit in C++ using Keil uVision.
- Adaptive filtering is used to design the filters for the testing unit and validated by running SIL simulation.