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 Fayeteville, 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 fields of action retrieval and 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 this 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 boad 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 Automative 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.