K VINEET VENKATESH RAO

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OBJECTIVE

Seeking Summer 22 Internship/Co-op opportunities to work in the field of Machine Learning, Computer Vision, specifically keen to work in On-Device AI, AutoML, Neural Architecture Search, Optimising ML Algorithms for resource-constrained devices.

EDUCATION

University of Michigan Ann-Arbor MI,USA
Graduate Student in EECS Dept, Signal, Image Processing and Machine Learning specialisation.Aug. 2021 – Apr. 2023 (expected)

Fall-21 Courses: EECS 551-Matrix methods for signal Processing and Machine Learning, **EECS 501**-Probability and Random Processes, **EECS 598-001**-VLSI for Communication and Machine Learning.
Winter-22 Courses:EECS 545-Machine Learning, **EECS 598**-Deep Learning for Computer Vision by **Prof. Justin Johnson**.

PES University Bangalore, India
Bachelors of Technology (B.Tech) with Distinction ***GPA:9.24/10*** *Aug. 2016 – Nov. 2020*
Major:Electronics and Communications Engineering
Minor: Computer Science and Engineering
Specialisation:Signal Processing (Selected Courses: Control Systems, Artificial Neural Networks, Speech Processing, and Machine Learning).

TECHNICAL SKILLS

Machine Learning Platforms : Tensorflow, Pytorch, Numpy, Keras,OpenCV,Tensorflow-Lite,Tensorflow-Micro.
Programming Languages:Python, C, C++, Verilog.
Development Tools:GitHub, Amazon Web Services(AWS), Miscrosoft Azure.

RESEARCH EXPERIENCE

Research intern at CCBD Aug. 2018 – Mar. 2019
*PES University,***Supervisor: Prof. Reetinder Sidhu** *Bangalore , India*

- Designed and simulated All-Digital-PLL for CDR (Clock and Data Recovery) and integrated it to the existing High Speed Serial Communication architecture.

RESPONSIBILITIES

Grader for EECS 452-Digital Signal Processing Lab Jan. 2022 – May. 2022
*University of Michigan,***Supervisor: Prof.Alfred Hero** *Ann Arbor , MI*

- Responsibilities of grading assignments and lab of Digital Signal Procssing Lab, which includes quantization, inferfacing Rsapberri pi, and tinyML techniques.

SELECTED PROJECTS

Quantized Winograd Convolution based accerlator for Convolution Neural Networks. Aug. 2021 – Dec. 2021

- Developed a **8-bit Quantized Flexible Winograd based Convolution Engine** in verilog for decreased inference time and model size. Simulated the entire inference cycle of a CNN in *MATLAB*.
- Investigated and implemented various Quantization techniques used in **tinyML** to reduce the model complexity.

Implementation of Bayesian Generative Adversarial Networks. Feb. 2019 – Apr. 2019

- Project aims to create an alternative to Google Images by creating the required image using **GAN** instead of retrieving existing images.
- Reported the demerits of classical DC-GAN (mainly *Mode collapse*) and implemented Bayesian-GAN to overcome these demerits.Developed model was tested on **MNIST** dataset as well as custom dataset.

ONLINE COURSE CERTIFICATES

- Deep Neural Networks with PyTorch *(Coursera)*
- Microsoft Az-900: Azure Fundamentals *(Microsoft Online Learning)*
- Automated Machine Learning(AutoML) - University of Freiburg. *(AI-Campus)*