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Aditya Vikram Gupta

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Education

University of Michigan Ann-Arbor **August 2021 - April 2023**
Master of Science in Computer Engineering – Signal & Image Processing and Machine Learning *GPA: 4.00/4.00*

University of Illinois at Urbana – Champaign **August 2017 - May 2021**
Bachelor of Science in Computer Engineering (Honors) *GPA: 3.71/4.00*

- Dean's List - Fall 2017, Spring 2019, Spring 2020, Fall 2020, Spring 2021

Relevant Coursework

- Applied Machine Learning (CS498)
- Intro to Algorithms (ECE374)
- Intro to Modern Robotics (ECE470)
- Computer Systems Engineering (ECE391)
- Artificial Intelligence (ECE448)
- Digital Systems Laboratory (ECE385)
- Database Systems (CS411)
- Senior Design (ECE445)

Work Experience

Course Staff - ECE 385 **Urbana, IL** **January 2021 - May 2021**

- Responsible for hosting Office Hours and helping undergraduates with course assignments and concepts.
- Measure student engagement and overall progress based on students' quiz and lab performance.

Research and Development Intern - Shure Inc. **Niles, IL** **June 2020 - August 2020**

- Deployed pre-trained models on dedicated IoT embedded systems for Machine Learning inferences.
- Analyzed model graphs using Netron and performed graph surgery for conversion and quantization for deployment on the IoT boards.
- Learned to use SDK tools to run machine learning inference using chip specific APIs for multiple embedded platforms.

Undergraduate Research - Professor Richard Y. Zhang **Urbana, IL** **January 2020 - May 2020**

- Research on power systems security through reinforcement learning.
- Modeled the power grid as a bellman equation with reward as the overloaded lines and the action as shutting a line.
- Used TD-Lambda methods to find non-trivial, two or three level deep solutions to the aforementioned model.

Undergraduate Research - Song Research Group **Urbana, IL** **May 2019 - November 2019**

- Research on quantification methods for different color strained vein loops in tumor injected chicken embryos.
- Identified vessel loops and vessel clusters based on self-labeled dataset, and Object detection libraries.
- Used blob detection and image processing tools (Python OpenCV and Keras) to highlight the vessel loops and calculate their area.

Projects

Movie Recommender Website (*github.com/adityavgupta/PEAS_Movie_Recommender*) **April 2021**

- A website that uses cosine similarity to predict movies and tv shows based on user preference.
- Developed using MySQL database design, Python flask backend, and HTML, JavaScript frontend.

Senior Design - RonArmor **January 2021 - April 2021**

- An enhanced face shield that uses sensors to detect human presence within 6ft of a user.
- Uses volume control to amplify user voice through the face shield with C++ backend.

Color Palletization Tool *(github.com/adityavgupta/ECE385PalletizationTool)* **May 2020**

- A Python tool that utilizes k-means clustering to generate a palette that can be used to compress and draw sprites in games.

ECE 385 Final Project - Street Fighter Game **April 2020**

- Designed a one stage rendition of the popular Street-Fighter game on the Intel FPGA DE2-115 development board.
- Supports multiplayer, projectiles motion, simulated gravity, advanced collision system, health bar-based scoring system, and audio.

ECE 391 Final Project - OS Design *(github.com/adityavgupta/ece391os)* **November 2019**

- Implemented a UNIX based basic file readable OS (ext2 filesystem) from scratch.
- Design includes 4MB pages for kernel and applications; devices (RTC and PIT); multiple terminals and basic scheduling.

Leadership and Activities

Engineering Learning Assistant (ELA) **August 2020 - December 2020**

- Instructed a class to introduce freshman to the ECE department through guided activities and group projects.
- Interact with students from diverse background while promoting inclusion, professionalism, and mental health.

Illinois Robotics in Space *(iris.ae.illinois.edu)* **September 2017 - May 2020**

- Gained experience in working with IoT devices and using them for path mapping for the robot (Electrical and Autonomous team).
- Board member (Webmaster) - Responsible for managing the Grainger Student Portal website and the main website for IRIS.

Resident Advisor - Hendrick House **May 2018 - July 2019**

- Promoted inclusion and team spirit through group activities in a residence hall of 350 students with diverse backgrounds.

Languages, Skills, and Interests

Spoken Languages: Native proficiency in English and Hindi.
Programming Languages: Python (Scikit-learn, OpenCV, TensorFlow), C/C++, x86, ReactJS, Matlab, MySQL, MongoDB, ROS.
Systems: Windows, Linux, Git (Version Control).
Hobbies: Swimming, Badminton, Guitar, Travelling: Himalayas, Photography, Sketching, Origami.