1) James Abernathy  
*Project Name: Real-Time Image Detection Using an Embedded Neural Network*  
*Short Description:* Live demonstration of a low-power embedded neural network highlighting recognized objects such as cats and cars in a video stream on the fly.  
*Course:* Summer Scholars 2018 (under Dr. Ahmadinia)

2) Thu Viet Nguyem  
*Project Name: A framework to analyze network lifetime for routing protocols in Mobile Ad Hoc Networks (MANETs)*  
*Short Description:* This is a research project on analysis of Network Lifetime for different routing protocols in Mobile Ad Hoc Networks using simulator NS2 and AWK text processor. The efficiency of four routing protocols DSR, AODV, DSDV and OLSR were analyzed in this project.  
*Course:* Summer Scholar 2018 (under Dr. Majd)

3) Thu Viet Nguyen  
*Project Name: A Tutor to Help ESL Students Learn Verb-Tenses*  
*Short Description:* Diagrams are used to help students comprehend verb tenses in English because tenses are very limited in Asian languages. This web-based tutor gives exercises to help students learn to use correct verb tenses.  
*Course:* CS499 Independent Research (under Dr. Yoshii)

4) Alexander Garcia  
*Project Name: T Minus Zero*  
*Short Description:* T Minus Zero is an Android application that tracks spaceflights and displays related
information of the spaceflights. It also allows the user to view live streams of the launches from within the app and it does real-time updates throughout the duration of a launch. It’s a space enthusiast’s dream come true!

Course: Personal Project

5) Kyle McGough
Project Name: Selenia
Short Description: Selenia is a simple, scalable web crawler. Pools of workers, written in Ruby, scrape the web via Selenium Hub. Worker state is managed at the pool level by a fault-tolerant server written in Elixir. The setup is ideal for deployment to a Kubernetes cluster.
Course: Personal project

6) Nam Ho
Project Name: Remote car control and monitor system
Short Description: This is a project to control/monitor/communicate with the car through CANBus. I setup a CANBus device that allows a Raspberry Pi to communicate with the car through OBD2 port. It retrieves data from the car and upload it to a real-time server through 4G. I developed a Mobile App to monitor and control the car through the CANBus. The App allows the user to remotely monitor the current status of the car including its torque, steering angle and temperature. Also, the user can use the App to remotely control the car’s functionality including horn, wiper and lock. It is also possible to steer and shift the car through CANBus. I plan to implement these and many more functions in the next steps.
Course: Personal Project (under Dr. Majd)

7) Shah Yash
Project Name: Fire Detection Using Security Cams
Short Description: In large rooms and high buildings, conventional fire detectors can hardly detect characteristic parameters of fire like smoke, temperature, vapor and flame in the very early time of fire, and cannot meet the demand of early fire detection in these places. Compared to conventional fire detectors, video fire detectors which have many advantages, such as fast response, long distance of detection, large protection area, are particularly applicable to large rooms and high buildings. Hence, We’d planned to work on this issue by finding limitations of all that detectors but at some point we found that we can replace detectors as cameras and make new algorithm for detecting fire.
Course: Personal project

8) Carlos Hernandez
Project Name: LightSmart
Short Description: Using city regulations for acceptable illuminance levels, we designed a system that can dynamically control the luminosity levels across a network of streetlights
Course: Independent/ Hackathon

9) Dragan Lukic
Project Name: Stock Portfolio Software Application
Short Description: The Stock Portfolio application is a web and mobile based software application that allows users to monitor stock prices at real time. Registered users will have the option to customize their watch list and discuss all stock-related topics through the provided forums. In the end, the multi-purpose software application will provide investors with the necessary tools to make smart investment decisions.
Course: Personal project that was expanded from the CS481 course

10) Arshia Shaikh

Anjali Tomar
Project Name: Seeed Bot Using nucleo board
Short Description: The bot is made using Seeed bot shield and nucleo board. The bot will be controlled by Bluetooth and will be moving according to the instructions that we will be giving from a mobile app.
Course: CS435 Embedded Systems

11) Maziar Refahi -
Project Name: ProtectMe
Short Description: Arm Mbed project which will be installed on ovens to protect babies from getting burnt by sending alarms to parents’ phones.
Course: CS697 Internet of Things

12) Robert Beauchamp IV
    Alan Doose
    Jonathan Scott
    Osman Mohammed - Viquar Ahmed
    Edgar Ramirez
Project Name: WANTED: DEAD NOT ALIVE
Short Description: A video game made in Unity!
Course: CS 485 Game Programming

13) Fredson Laguna
    Chaz Lambert
    Anthony Law
    Victor Le
    Jeremy Marino
Project Name: Lucent
Short Description: Lucent is a 2.5D top-down/side-scrolling hybrid shoot’em up game made with the Unity engine.
Course: CS485 Game Programming

14) Trina Wetzel
    Juan Moraleja
    Austin Banks
    Alec Guilin
    David Pham
Project Name: The Grim Escape
Short Description: The Grim Escape is an action packed 2D game casted in a 3D environment created in Unity brought to you by Mesa 8 game productions. Unleash your inner reaper and survive the deathly rooms of darkness through close quarter combat, unlock awaiting treasures and hidden rooms, and defy the odds brought against you.
Course: CS 485 Game Programming

15) Aashika Vasra Thirukkonda Ramesh
    Arsha Shaikh
Project Name: Analysis of TCP Fairness
Short Description: The project is a framework that analyzes TCP fairness among flows in a network for different scenarios. We study the congestion window size at the transmitter and the throughput at the receiver to analyze TCP efficiency in a congested network when a high volume of traffic is exchanged between the network entities and the routers buffers are exhausted by the flows. We use ns2 to simulate the network protocols.
Course: CS537 Data Communication and Networks
16) Kavan Patel  
**Project Name:** HTTP implementation and analysis in Python  
**Short Description:** The project implements HTTP Protocol in Python 3 in both parallel and pipeline modes and analyzes the implemented protocol for large number of visits on the server.  
**Course:** CS537 Data Communication and Networks

17) Nicholas Pisacane  
Nicholas Zimmerman  
**Project Name:** TMP - Temperature Message Protocol for Smart Homes  
**Short Description:** The project introduces an application layer protocol TMP, designed by Nicholas Pisacane for the purpose of transmitting and responding to temperatures from arbitrary sensors efficiently across the network to an AWS server on the Cloud for the purpose of running smart home applications. We also developed a web application to track and visualize real-time temperatures emitted from Arduinos set up by Nicholas Zimmerman with custom sensors to showcase the use and utilization of the TMP protocol. The developed web application can also send commands over the network to the Arduinos.  
**Course:** CS 436 Intro to Networking

18) Ace Figueroa  
**Project Name:** Remote Camera System  
**Short Description:** The project uses an IoT device that takes pictures from user and stores them in Google Cloud platform. I also developed a web application that retrieves the captured pictures from the server and displays them to the user. The user is also able to send commands over the network to the camera to take pictures.  
**Course:** CS 436 Intro to Networking

19) Ryan Stephenson  
Maciek Dobaczewski  
**Project Name:** DHCP Protocol in Python  
**Short Description:** The project implements DHCP protocol in Python 3 on both client and server sides using Socket Programming and communications between network entities. The implemented server assigns and manages the network IP addresses using a dictionary of jsons in Python 3.  
**Course:** CS 436 Intro to Networking

20) Michael Mcdermott  
Maxim Sharko  
**Project Name:** IoT Network Temperature System  
**Short Description:** The project was designed and developed to implement a protocol to monitor humidity and temperature and send commands back to control the IoT device. The project was implemented using cross-platform Flutter.io framework for the native app development that is backed up by Google Firestore database. We configured Raspberry Pi 3 using Firebase API to send the sensor data to the Google Cloud Backend System as a Service. Mobile App is connected to the BaaS to retrieve the data. The app has the capability to send commands back to the Raspberry Pi. The app is able to handle a large number of users through the use of atomic transactions that deal with race conditions.  
**Course:** CS 436 Intro to Networking

21) Byron Dahlavi  
Lei Tang  
**Project Name:** MiRlinMol  
**Short Description:** MiRlinMol is a app for the Magic Leap Mixed Reality platform to visualize protein
structures developed using the Magic Leap SDK and Unity. The goal is to use the app as a learning tool in CHEM 351 (Biochemistry I) and eventually as a stand alone mixed reality protein visualization tool for the Magic Leap platform.
Course: Project for Dr. Jayasinghe of Chemistry

22) Kyle Zampell
Project Name: Embedded Facial Mapping
Short Description: This project focused on optimizing open-source facial recognition software for operation on computationally-limited hardware. The current libraries are designed for operation on expensive, full-sized desktop computers. I was able to improve the performance on an inexpensive Raspberry Pi.
Course: Master’s Project

23) Nithesh Singh Sanjay
Project Name: MobileNet-Tiny
Short Description: I present a new neural network architecture, MobileNet-Tiny that can be used to harness the power of GPU based real-time object detection in Raspberry-Pi and also in devices with the absence of a GPU or with limited graphic processing capabilities such as mobile phones, laptops, etc. MobileNet-Tiny trained on COCO dataset running on a non-GPU Dell XPS 13 laptop, achieves an accuracy of 19.0 mAP and a speed of 19.4 FPS which is three times faster than MobileNetV2, and when running on a Raspberry-Pi, it achieves a speed of 4.5 FPS which is up to 7 times faster than MobileNetV2. Also, the model size of MobileNet-Tiny is 4.5MB which is five times smaller than MobileNetV2. MobileNet-Tiny was modeled to offer a compact, quick and well-balanced object detection solution to a variety of GPU restricted devices.
Course: Master’s Project