College of Computing and Software Engineering / Computing Showcase /
Fall 2018 C-Day Program

Fall 2018 C-Day Program

November 29, 2018

Location: Marietta Campus - Atrium (J) and Design Studio II Auditorium (I2)

C-Day Home Page

Return to the C-Day home page.

Fall 2018 Winners

View the Fall 2018 C-Day winners.

Flash Session Presentation

Download the C-Day Flash Session Presentation.

TIME	EVENT
4:00 pm - 4:30 pm	Student check-in time followed by set-up (presenters only) **J lobby**
4:30 pm - 5:00 pm	Check-in judges, industry partners, Networking **J lobby**
5:00 pm - 5:35 pm	Welcome from Dean Preston followed by Flash Session **I2**
5:35 pm - 6:20 pm	Judging of Student Posters and Games Browsing **J building**
6:20 pm - 6:40 pm	Pizza and Networking **J152**
6:40 pm - 6:45 pm	Introduction of Keynote Speaker (Dean Preston) **I2**

6:45 pm - 7:00 pm	Keynote Speaker: Nevarda Smith Vice President, Technology, MagMutual **I2** Innovation in an Executive Setting
7:00 pm - 7:10 pm	Recognition of Judges **I2**
7:10 pm - 7:40 pm	Presentation of Awards **I2** Sponsored by MagMutual - Best Undergraduate Capstone Project - Best Graduate Capstone Project - Best Graduate Research Project - Best Undergraduate Research Project Special Award "Most Impactful Cyber Project" Sponsored by SunTrust

Terabyte Sponsor:

Kilobyte Sponsor:

Judges ▬

- Bob Cole - Managing Director - Accenture
- Suneel Mendiratta - VP - Product Development - ADP
- Jaspal Sagoo - CDC Chief Technology Officer - Centers For Disease Control and Prevention
- Scott Bradshaw - Application Lead - Georgia Pacific
- Bruce Skillin - Technology Innovator - Georgia-Pacific
- Andrew Greenberg - Executive Director - GGDA
- Eric Carrier - CEO - ISO Network

- Dr. Meng Han - Assistant Professor - CCSE, Kennesaw State University
- Evanda Remington - Director - R&D - Manhattan Associates
- Shaun Sheppard - Lead Game Developer - Motion Reality, Inc.
- Joe Cassavaugh - CEO/Designer/Engineer - Puzzles By Joe
- Peter Vennel - Head of Data Management - SAFE-GUARD Products International
- Justin Rose - IOS developer - State Farm
- Keith Deininger - Sr. Information Security Analyst, Information Security Officer - SunTrust Banks, Inc., Enterprise Security & Resiliency (ESR)
- Leslie Dugosh, PMP, CSM - Director of Program Management - Transaction Network Services, Inc

Rubrics ▬

Capstone/ Undergraduate/Graduate Research scale 0 - 10 with 0 representing "Poor" and 10 representation "Exceeds Expectations"

- Successfully completed stated project goals and reported deliverables (0-10)
- Methodology/Approach: All required elements are clearly visible, organized, and articulated (0-10)
- Effective verbal presentation (0-10)

Games scale 0 - 10 with 0 representing "Poor" and 10 representation "Awesome"

- TECHNICAL: Technically sound with appropriate visual & audio fidelity(0-10)
- GAMEPLAY: Engaging & Fun, with an intuitive UI. Rules of play are clear. Includes a win/lose state(0-10)
- ORIGINALITY: Sound, Art, Design, or Code(0-10)

Undergraduate Capstone Projects (33) ▬

* Candidates for the best undergraduate capstone project award

- **UC-01** OSINT sentiment and risk analysis
  by Alexander Dushane (SWE), James Luttrell (BSSWE), Chandler Brown (BSSWE), Thomas James (BSSWE), Marco Alfaro, (BSSWE), Brett Bouthilette (BSSWE)
  Advisor: Dr. Reza Parizi
  This project is a proof of concept for analyzing sentiment and work history of a given companies employees to help determine potential security risks.
- ***UC-02** Social Market Economy Index Website
  by Drew Cofer (BAS Information Technology), Tyler Cox (BS Information Technology), Jerome Streete (BAS Information Technology), Josh King (BS Information Technology), Johnathan Salter (BS Information Technology)
  Advisor: Dr. Ming Yang
  For this project we were tasked with creating a website that was able to display the Social Market Index Economy data. We were given 15 different data points for 216 countries and tasked to have that information display on a world heatmap. The heatmap will show the name of the country and the datapoint for the variable you are viewing. If you choose to see more information about

the country you are able to to click on the country in the map and it will redirect. Alternatively, you can also select the country from the dropdown menu which will redirect to the country information page. On the country information page you are able to select a country from the dropdown menu and it will bring up more information about the country. This page also allows for comparing the country data to the world and region mean data. At the bottom of the country information page there is a simulation that allows the user to alter the variables and see a 25 year prediction for effect of the altered variable(s). Learn More

- ***UC-03** Roommates 40 Plus website
  by Stephanie Gray (BSIT), Ashly Rumery (BSIT), Jacob Christensen, (BSIT) , Julia Huth, (BSIT)
  Advisor: Dr. Ming Yang
  Many people in their 40s and older find themselves needing to share the cost of living due to losing their jobs or being laid off. Many times, these people need to share living expenses and one way to do that is to find a roommate. Roommates40Plus.com is a website that allows people to submit forms based on if theyâ€™re looking for a roommate or renting a room with people needing a place to live. Learn More

- ***UC-04** Hydrosyl - Your Smart Water Bottle
  by Ganama Hawaou (BSCS), Jordan Simo Kaptue (BSCS), Victor Youdom Kemmoe (BSCS) , Kyle Manthe (BSCS) , Marlon Jones (BSCS)
  Advisor: Dr. Xiaohua Xu
  Propose in a creative way, to the human being a way to control and have a better view of his/her water intake by implementing a SMART WATER BOTTLE linked to a mobile app. Learn More

- ***UC-05** Murta: A Modern RPG
  by Johnny Barnes (BSCGDD), Timon Wood (BSCGDD), Chuka Amaeze (BSCGDD)
  Advisor: Dr. Rongkai Guo
  We wanted to create a role-playing game set in modern times. Typical RPGs are fantasy, so we wanted to explore the possibility of blending an atypical setting to a beloved genre. Learn More

- **UC-06** War is Hell
  by Konrad Drapela (BSCGDD)
  Advisor: Dr. Rongkai Guo
  Capstone project game.

- ***UC-07** Environment Art
  by Timon Wood (BSCGDD)
  Advisor: Dr. Rongkai Guo
  Portfolio Learn More

- ***UC-08** Shard Infinite - Capstone Game
  by Alex Sala (CGDD)
  Advisor: Dr. Rongkai Guo
  Shard Infinite is a procedurally generated adventure game which utilizes custom visual, audio, and encounter generation systems to create unique experiences for players. Constructed in the Unity game engine, Shard Infinite represents an exploration of how procedural content can be used beyond the bounds of simply changing the location in which play occurs. Learn More

- **UC-09** Choromage
  by Steffen Lim (CGDD), Anne McCranie (CGDD), Dylan Gillespie (CGDD)
  Advisor: Dr. Chao Mei
  A story-based open-world adventure RPG with moral ambiguity. Learn More

- ***UC-10** Project Loot RPG
  by Taylor Adams (BSCGDD)
  Advisor: Dr. Rongkai Guo
  Project Loot RPG is a mobile role-playing game that focuses on gathering loot such as hats and weapons. The game has an in-depth system that allows players to swap the materials their weapons and hats are made from, as well as combine them to create more powerful equipment.
- ***UC-11** Vesta: Absolution
  by Christopher Budden (BSCGDD), Brian Patterson (BSCGDD), Austin Huffman (BSCGDD)
  Advisor: Dr. Chao Mei
  3D action game that evokes the charm and thrill of classic arcade games
- ***UC-12** Automated Logic Translation Tool
  by William Gambrell (BSSWE), Emad Vaid (BSSWE), Benjamin Buzeta (BSSWE), Bobby Rattanaxay (BSSWE), Halima Diallo (BSSWE)
  Advisor: Dr. Reza Parizi
  Automated Logic Tool
- ***UC-13** IoT - Melt Pump Work-Order System
  by Shamita Hattangady (BSSWE), Aisha Siddiqui (BSSWE), Mark Zeagler (BSSWE), Michael Bowman (BSSWE), Drashtee Parmar (BSSWE)
  Advisor: Dr. Reza Parizi
  Shaw Industries has a need to further their strategy and implementation of collecting IoT produced data. There is an assorted array of systems where IoT data is captured but it is not aggregated in a way that allows all interested parties to examine the data (data democratization). There are four melt pumps in Plant 15's extrusion department and two extrusion backing lines with two different applicators on each line. These melt pumps are critical to the lines because if they are unable to keep pace, the line must be slowed down to avoid a negative impact on quality.
- ***UC-14** Lighthouse - Personal Safety Hub
  by Joseph Chamberlain (BSSWE), Giuseppe Scoppino (BSSWE), William Silloway (BSSWE), Stephens Jean-Jacques (BSSWE), Daniel Pratt (BSSWE)
  Advisors: Dr. Reza Parizi, Prof. Rachel Foster
  Lighthouse is an application designed to provide a greater sense of safety and security for yourself and those close to you. It strives to innovate on the way in which we approach personal safety and accountability. This was accomplished through the development of a Hub that allows users to check-in and also create a check-in schedule. A user provides one or more contacts who, in the case of missed check-in or an emergency, will be notified regarding the user's status. Integrations with the iOS application and Google Home enable users to interface with the Hub seamlessly and quickly create check-in schedules, receive notifications regarding upcoming check-ins, and check-in. The product helps to pave the way for the future of personal safety and innovations through smart home devices. Learn More
- ***UC-15** Blackfire (Capstone Game)
  by Keiler Schroeder (CGDD), Jetta Koves (CGDD), Ryan Kessler (CGDD)
  Advisor: Dr. Rongkai Guo
  Blackfire is a turn-based strategy game where two players vie for control of the Orb of Blackfire. Each player has a team of three unique characters that each have different strengths and abilities. The players must use strategic positioning and the unique characteristics of their units to gain control of the Orb and escape with it. Learn More

- ***UC-16** Automatic Project Scheduling
  by Hunter Allen (BSIT), Jae Park (BSIT), Louis Cheng (BSIT), Jim Nguyen (BSIT), Alejandro Lopez(BSIT), Jay Norris (BSIT)
  Advisor: Dr. Ming Yang
  Python GUI program that takes an Excel Spreadsheet as an argument and returns an Output Excel Spreadsheet. The program uses the Munkres python module to implement the Hungarian Algorithm that takes a matrix as an input and returns a list of index pairs.
- ***UC-17** Quantum Computing Website
  by Jessica Brummel (BSCS), Zach Dillard (BSCS) Ian Galler (BAACS), John Jacobs (BSCS), James Vice (BSCS)
  Advisor: Dr. Ken Hoganson
  development of a website to present an understanding of quantum computing and its emerging field of study; with demonstration and walkthrough of Qutip quantum computing simulator. Learn More
- ***UC-18** Deep Learning License Plate Reader
  by Armando Mercado (BSCS), Carlos Lopez (BSCS), Daylon Janis (BSCS), Georgi Valkov (BSCS), Rob Douma (BSCS)
  Advisor: Dr. Xiaohua Xu
  A real time license plate reader using Machine Learning thorough TensorFlow to read license plates from a video feed and look up the result in a database for make, model, and parking information. Learn More
- ***UC-19** Hand Gesture Recognition for VR
  by Andrew Savas (BSCS, BSCGDD), Garrett Eddy (BSCS, BSCGDD)
  Advisor: Dr. Xiaohua Xu
  We give a summary of how we can recognize hand postures using Leap Motion and give examples on how this hand recognition increases the number of interactions possible in VR Environments. A demo is available to interact with where the user can test the hand posture recognition to see the speed/accuracy we can determine the hand posture as well as seeing some possible interactions.
- ***UC-20** Cardian - the Car Security System
  by An Vu (BSCS), Roger Slattery (BSCS), Tori McCullah (BSCS) , Micah Veale (BSCS), Jade Corn (BSCS)
  Advisor: Dr. Ken Hoganson
  Cardian is a vehicle monitoring and notification system. This system sends push notifications with surrounding photos when activity is detected at a user's car. The system's design is to provide vehicle owners with a better sense of safety for their property. Learn More
- **UC-21** Chematomic
  by Colton Trau (BSCGDD)
  Advisor: Dr. Rongkai Guo
  Chematomic is an Educational Action game where characters have a lot of chemistry. You play as chemist nanobots Adam and Mike on a subatomic adventure to save Utopian City from a threat too small for us to handle. Learn More
- **UC-22** Dig Royale - UE4 Steam Multiplayer
  by Christian Murphy (CGDD)
  Advisor: Dr. Rongkai Guo
  Dig Royale is a online multiplayer game made entirely by BluePrints (visual coding) in Unreal Engine 4. It works with a peer to peer network through the UE4 Steam plugin. Learn More
- ***UC-23** The CakeBook
  by Nathanael Curtis (SWE), Kim Hertz (SWE), Victoria Williams (SWE),

Thomas Glover (SWE), Danielle Brooks (SWE)
Advisor: Dr. Reza Parizi
How to improve the workflow of ordering bakery items at Gabriel's Bakery, a local business.

- ***UC-24** Ninjattack
  by Bradley Engwer (BSCGDD)
  Advisor: Dr. Rongkai Guo
  Ninjattack is an elegant hack 'n' slash game for mobile devices.

- ***UC-25** IP Address Score Using Blockchain
  by Andrew Evans (SWE), Zach Starnes (SWE), Cheyenne Sancho (SWE), Damonte Bowie (SWE), Peter Twene (SWE), Mirna Ouied (SWE)
  Advisor: Dr. Reza Parizi
  Developed a Blockchain proof-of-concept on the IBM Cloud Platform using Hyperledger Fabric to demonstrate the modification, transfer, addition and deletion of assets.

- **UC-26** GTRI Communications Project
  by Shaidi Grell (BASIT), Elijah Watson (BASIT), Solomon Bush (BSIT), Christopher Fox (BSIT)
  Advisor: Dr. Ming Yang
  As GTRI staff, we have been tasked with finding an alternative to Hipchat as a chat service. We have found likely candidates, narrowed our results down to three candidates, and ran in-depth tests on one likely replacement. Learn More

- **UC-27** AI for Finance
  by Kushum Thapa (BS Information Technology), Nathanael Leman (BS Information Technology), Mark Malaney (BS Information Technology), Isaac Efik, (BS Information Technology), Mizzani Walker-Holmes, (BS Information Technology)
  Advisor: Dr Meng Han
  To create tools to assist individuals in using data to influence their financial well-being regarding investment decisions made with in the stock market. This project leverages sentiment analysis tooling, deep learning models, and big social data mining to analyze stock potential and maximize future returns based on company's social media presence, stock market data history and linear regression calculations.

- ***UC-28** SCADA Network Design Analysis
  by Brittney Miller (BSIT), Cedeno Carter, Tyrone Gardner
  Advisor: Dr. Ming Yang
  Industrial Control Systems (ICS) are other systems, networks, devices and controls that are used to automate, operate, and collect data on industrial processes. These systems include are Supervisory Control and Data Acquisition (SCADA) systems, Distributed Control Systems (DCS), and other control system configurations such as Programmable Logic Controllers (PLC). ICS systems are used in nearly every industrial and critical infrastructure sector today such as power grids, megafactories, water treatment systems, and nuclear power plants. Therefore these systems have become targets for malicious attacks. The purpose of this specification is to define the typical network architecture of critical infrastructure sectors, their vulnerabilities and pose solutions to remediate threats. Learn More

- ***UC-29** AI and Chess Variant IOS Game
  by Nick Curtin (BSCS), Illya Blalakin (BSCS), Brian Iruka (BSCS), Reece Perry

(BSCS), Pouya Ranjbar (BSCS), Dozie Enworom (BSCS)
Advisor: Dr. Ken Hoganson
This project allows humans to play against an AI or another person in a game of FuzzyLogic Chess. This game is created for the iOS platform. Both players will only be allowed to make legal moves in accordance to the rules of FuzzyLogic Chess. The AI player plays competitively by scanning the board as input and updating data structures and variables accordingly, and then using that data to consider all possible moves and make the best move that it can.

- ***UC-30** Approximate String Matching
  by Aaron Roberts (BSCS), Lea Nooyen (BSCS), Jonathan Miu (BSCS), **Daniel Childers, Chase Wood**
  Advisor: Dr. Xiaohua Xu
  The concept of approximate string matching or "fuzzy" matching is an important any industry that make use of data mining or aggregation. Some example industries include data driven marking, genetic sequencing, plagiarism detection and spam detection just to name a few. There are many different algorithms used to fuzzy match data sets. For this project we chose to look at the Levenshtein Distance algorithm implemented in three languages: Python, C++ and C#. By running benchmarks on static datasets using implementations in the different languages we found that a C-based Python approach to the Levenshtein Distance algorithm was the most efficient. We then designed a web application that allows a user to upload data sets and perform a "fuzzy" match to identify data records that may be equal between two of the data sets. Learn More

- ***UC-31** Asset Tracker - StructureWorks
  by Connor Kendrick (BSCS), Lane Lake (BSCS), Mark Chamberlain (BSCS), Emily Cox (BSCS), Kade Randall (BSCS)
  Advisor: Dr. Xiaohua Xu
  Our group was contracted by StructureWorks to implement an application defined by the specification document given to us. The purpose of this project was to create a web application that allows a company to track trailers and other equipment, whether in the company's plant or a remote work site. This tool displays where all assets are located using the Google Maps API, and provides other functionalities such as defining geofence boundaries, and sending out notifications when assets enter or leave these geofences.

- ***UC-32** Muzer - Personal Music Server
  by Stanley Gilstrap (BSCS), Stephen Chatham (BSCS), Alex Blaes (BSCS), Nick Pounders (BSCS), Kevin Kendrick (BSCS)
  Advisor: Dr. Xiaohua Xu
  Able to select songs from home PC and stream them on a remote device.

- ***UC-33** OwlPath
  by Charlie McDermitt (BSCS), Corey Harris (BSCS), Emmaline English (BSCS), Ryne Gipson (BSCS), Bert Sloan (BSCS)
  Advisor: Dr. Xiaohua Xu
  Detailed campus map application with room-to-room navigation

Graduate Capstone Projects (7)

* Candidates for the best graduate capstone project award

- ***GC-01** Android "Identify" App
  by John McKinney (MSSWE), John Sineath (MSSWE), Mark Kordahi
  Advisor: Dr. Reza Parizi

The project developed a stand-alone Android application named "Identify" which utilizes deep learning CNN and R-CNN for the detection and classification of visual objects by analyzing either still images (photographs) or images seen thru a live camera lens.

- ***GC-02** Satellite Image Land Classification
  by Raymond Martin (MSCS)
  Advisor: Dr Mingon Kang
  This is a multiclass classification project surveying several methods. The dataset is the SAT-6 satellite image airborne dataset. It contains 404,000 samples and 3136 features per sample (RGB and infrared, 28x28 pixels). Each sample composes one of six labeled types of land (e.g. 'water', 'road'...). The project is done entirely in Apache Spark (using pyspark) on the KSU Spark server.

- ***GC-03** Toxic Comment Classification
  by Nusrat Asrafi (MSCS)
  Advisor: Dr Mingon Kang
  The aim of the project is to build a multi-headed model that's capable of detecting different types of toxicity like threats, obscenity, insults, and identity-based hate . I am using a dataset of comments from Wikipedia talk page edits. Improvements to the current model will hopefully help online discussion become more productive and respectful. I want to create a model which predicts a probability of each type of toxicity for each comment.

- ***GC-04** Predict Credit Risks
  by Liyuan Liu (Ph.D. in Analytics and Data Science), Yiyun Zhou (Ph.D in analytics and data science
  Advisor: Dr. Mingon Kang
  In general, credit risk datasets are label imbalance datasets, and logistics regression is one of the standard credit risk model in the industry for many years. In this project, I aim to conduct an experimental analysis on German Credit Risk Dataset to predict banking loan default using multiple strategies to deal with the imbalanced data, such as random oversampling, random under-sampling, SMOTE, SMOTEENN, weight-based method. After that, to examine the effects of comparing multiple strategies and different machine learning algorithms, I employ multiple machine learning algorithms: decision tree (DT), random forest(RF), logistic regression(LG), neural networks(NN), and support vector machine(SVM).

- **GC-05** CNN - Identify malign moles on Skin
  by sanjoosh akkineni (PhD Student, Analytics and Data Science)
  Advisor: Dr. Mingon Kang
  The idea is to develop a simple CNN model , and evaluate the performance to set a baseline. Data I have used is a set of images from the International Skin Imaging Collaboration: Melanoma Project ISIC. Following steps to improve the model are: Data augmentation: Rotations, noising, scaling to avoid over fitting Transferred Learning: Using a pre-trained network construct some additional layer at the end to fine tuning our model. (VGG-16, or other) Full training of VGG-16 + additional layer.

- ***GC-06** Cancer Detection-Atrous Convolution
  by NELSON Zange TSAKU (MSCS)
  Advisor: Dr. Mingon Kang
  For the past 50 years, Pathologists have had significant tedious moments providing accurate quantifications (e.g. tumor extent, nuclei count) and

reduced variability between related research findings. In this work, we: - create algorithms to extract data - build models to ingest the data, - detect and classify key classes, following tested metrics through tuning and tweaking. Such an automated approach have shown to be beneficial in the context of significantly reducing such tedious processes while helping pathologists to reduce variability amongst themselves. Learn More

- **GC-07** Outcome Prediction in Intensive Car
  by **Lauren Staples (PHD in Analytics and Data Science), Ryan Rimbey (MS-Applied Statistics)**
  Advisor: Dr. Mingon Kang
  This project uses an open-access database called Medical Information Mart for Intensive Care database (MIMIC3) developed from Beth Israel Deacon Hospital in 2012. The goal of this project is to predict outcomes (in this case, death within 30 days of hospital discharge) in an Intensive Care Unit Setting, with demographic data and billing/claims data. This project achieved 79% accuracy with logistic regression and 10-fold cross validation on a balanced dataset (equal number of deaths and non-deaths). This project uses a unique method of dimension reduction in handling categorical billing data codes (International Classification of Diseases, ICD-9) that achieves the same model evaluation characteristics as traditional one-hot encoding.

Undergraduate Research Projects (4)   —

* Candidates for the best undergraduate research project award

- ***UR-01** CapsNet Traffic Light Recognition
  by **Keshav Shenoy (HS Intern)**
  Advisor: Dr. Selena He
  This research constructed a Capsule Neural Network and a Convolutional Neural Network to classify traffic light images by signal and looked at the differences between the two in accuracy of classification.
- ***UR-02** Phishing Analysis using ML
  by **Suvan Paturi (HS Intern)**
  Advisor: Dr. Dan Lo
  Various machine learning algorithms were applied to phishing website datasets to assess their performance by comparing calculated accuracy, false positive, and false positive rates for each algorithm. The testing was conducted using HPCC Systems ECL and the dataset used was obtained from the University of Huddersfield's ML Repository.
- ***UR-03** MS Office Macro Malware Detection
  by **Ruth Bearden (BSCS)**
  Advisor: Dr. Dan Lo
  Microsoft Office documents can contain macros, scripts designed to automate menial tasks or improve a document's user-interface. Malicious attackers, however, use macros as a means to download malicious payloads from the internet onto a host computer. Due to the ever-improving document engineering techniques these attackers employ, it is becoming increasingly difficult to visually identify a document containing macro malware, and users are susceptible to activating malicious macros. The goal of this research is to find the best way to detect macro malware automatically using machine learning. This project utilizes two kinds of data extracted from a sample of malicious and benign (safe) documents - VBA (the macro script source code) and P-code opcodes (a compiled version of this source code). Using this

sample to train K-Nearest Neighbors, Random Forrest Decision Trees, and SVM machine learning models yielded a high prediction accuracy of 98% and revealed an interesting trend in the data that may help to improve this accuracy: using KNN and SVM, semantic information from the VBA data improves detection accuracy. We will use this trend to further explore classification using semantic-heavy analysis in the future.

- ***UR-04** Text-based Speaker Segmentation
  by Steffen Lim (BSCGDD), Sams Khan (BSCS)
  Advisor: Dr Chih-Cheng Hung
  Imagine a text to speech algorithm that can adjust it's voice based on contextual linguistic identifiers. Learn More

Graduate Research Projects (10)   —

* Candidates for the best graduate research project award

- ***GR-01** VR/AR App for Non-Visual Navigation
  by Karis Kim (MSIT), Devan Patel (BSCGDD), Nick Murphy (MSCS)
  Advisor: Dr. Rongkai Guo
  People with visual impairments often require repetitive on-site training to memorize routes that they need to reach desired destinations. This study examined the feasibility of virtual environments as an Assistive Technology tool to supplement tradition training for daily use and pathway recall. Participants at the Center for the Visually Impaired in Atlanta were outfitted with testing equipment and asked to navigate pure virtual and mixed reality environments based on the equipment's verbal feedback. Data on the participant's movement, orientation, and confidence while using the system were collected to gain insights on the viability of virtual reality-based Assistive Technology for orientation and mobility. Learn More
- **GR-02** Customer Review Analytics
  by Jhanvi Vyas (MSIT)
  Advisor: Dr. Meng Han
  Analyzed the results obtained from experiments to analyze the impact of customer review on today's generation.
- **GR-03** Analysis of Top Grossing Apps
  by Qingliang Yang (MSIT)
  Advisor: Dr. Meng Han
  The online software distribution channels such as App Store has offered developers a powerful distribution mechanism. App store help users discover apps by providing categories and rankings. The ratings and reviews left by users in these online App store have the potential to influence new users. The motivation for this project is to find some clues to get high ratings to ensure that an app has a viable future. I think it is meaningful to the application company and developers.
- **GR-04** How Big Data Can Improve Healthcare
  by Shayan Shamskolahi (MSIT)
  Advisor: Dr Ying Xie
  This project explores the possibilities that big data offers in improving the healthcare industry. More specifically, it seeks to provide an example where big data can assist decision-makers in improving the quality and effectiveness

of healthcare in hospitals across the U.S. In conclusion, the project will discuss the importance of accessing public data (specially healthcare datasets) and the role that it can play in public health.

- ***GR-05** Imbalanced Dataset
  by Wajira Abeysinghe (MSCS)
  Advisor: Dr Chih-Cheng Hung
  Imbalanced dataset is available in many fields such as in credit card fraud detection, classification usually performs on the large number of normal transactions, to detect small percentage of fraud transactions.

- ***GR-06** Machine Learning for Fintech
  by Karl Kevin Tiba Fossoh (MSCS)
  Advisor: Dr. Dan Lo
  Knowing the importance of the detection of fraud in our banking system, especially to protect users from unlawful transactions, we decided to go for a diversified analysis of a transaction report dataset. This dataset enabled us to better understand what are the key parameters to identify for fraud detection along. The accuracy of those different classifications is based on different methods, each providing an insight on what parameters and data affect the most the detection

- ***GR-07** ML for IDS benchmark in HPCC System
  by Alexander Federico (MSCS)
  Advisor: Dr. Dan Lo
  The research looks into the performance of machine learning algorithms and how accurate the machine learning model can classify whether a packet is an intrusion or not.

- ***GR-08** Youtube8M Video classification
  by Karl Kevin Tiba Fossoh (MSCS), Maxwell Lavin (MSCS)
  Advisor: Dr. Dan Lo
  The main motivation of the research was the capacity to summarize digital entities such as video, sounds, and images to a simple textual representation. One of the reason was to provide the ability to people to get fast and efficient summarization of long content without any risk of losing detail, information or precision. One simple approach was to try to work with videos. In effect, videos are a set of images frames associated with sound frames. The capacity to dissociate all of these features gives us a wide array to analyze each of them can affect the neural network designed to provide a classification and a captioning of the video, but also how each of these elements could be associated with another to provide a different result.

- ***GR-09** KNN Optimization with Vector Models
  by Arialdis Japa (MSCS), Daniel Brown (MSCS)
  Advisor: Dr. Yong Shi
  Optimization to the traditional implementation of the KNN algorithm by using vector space models.

- ***GR-10** Animal Identification deep learning
  by Joel Kamdem Teto (MSCS)
  Advisor: Dr. Ying Xie
  How can we outperform the best animal identification model on the SS project? Can capsule network perform better than CNNs in large and complex datasets? Can we build a capsule net that outperforms the best capsule net model on large and complex dataset?

College of Computing and Software Engineering / Computing Showcase /
C-Day Winners - Fall18

C-Day Winners Fall 2018

Category: Graduate Capstone Project

<u>1st place</u> GC-04 Predict Credit Risks
by Liyuan Liu, Yiyun Zhou
Major: Ph.D in Analytics and Data Science
Advisor: Dr. Mingon Kang

<u>2nd place</u> GC-01 Android "Identify" App
by John McKinney, John Sineath, Mark Kordahi
Major: MSSWE
Advisor: Dr. Reza Parizi

<u>3d place</u> GC-02 Satellite Image Land Classification
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by Karl Kevin Tiba Fossoh
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<u>2nd place</u> GR-10 Animal Identification deep learning
by Joel Kamdem Teto
Major: MSCS
Advisor: Dr. Ying Xie

<u>3d place</u> GR-09 KNN Optimization with Vector Models
by Arialdis Japa, Daniel Brown
Major: MSCS
Advisor: Dr. Yong Shi

Category: Undergraduate Capstone Project

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by Joseph Chamberlain, Giuseppe Scoppino, William Silloway, Stephens Jean-Jacques,
Daniel Pratt
Major: BSSWE
Advisors: Dr. Reza Parizi, Prof. Rachel Foster

2nd place UC-08 Shard Infinite - Capstone Game
by Alex Sala
Major: BSCGDD
Advisor: Dr. Rongkai Guo

3d place UC-23 The CakeBook
by Nathanael Curtis, Kim Hertz, Victoria Williams, Thomas Glover, Danielle Brooks
Major: BSSWE
Advisor: Dr. Reza Parizi

Category: Undergraduate Research Project

1st place UR-03 MS Office Macro Malware Detection
by Ruth Bearden
Major: BSCS
Advisor: Dr. Dan Lo

2nd place Text-based Speaker Segmentation
by Steffen Lim (BSCGDD), Sams Khan (BSCS)
Advisor: Dr Chih-Cheng Hung

3d place Phishing Analysis using ML
by Suvan Paturi (HS Intern)
Advisor: Dr. Dan Lo

Special Award "Most Impactful Cyber Project"

GC-06 GR-06 Machine Learning for Fintech
by Karl Kevin Tiba Fossoh
Major: MSCS
Advisor: Dr. Dan Lo

Contact Info

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