2018 Computer Science Capstone Day

9–3:30 May 4, 165 Barrows Hall

9:00	Opening	
9:15	Andrew Cramer (Silvia Nittel)	*Natural Disaster Application* A crowd-sourced natural disaster application, focused on collecting and displaying user feed data
9:30	Katelyn Manzo (Silvia Nittel & Sharon Klein)	*Connecting to Begin a Community Energy Project* Social media expansion of the Community Energy US website (www.communityenergyus.net)
9:45	Nicolas Ward (Silvia Nittel)	*University Tutoring Application* An on-demand tutoring application for students to get academic help.
10:00	Aaron Speakman (Sudarshan Chawathe)	*A GPS Based Study Group Formation App* Connects students looking to study with others from the same courses and refines results based on location
10:15	Justin Norman (Torsten Hahmann)	*Procedural Generation Optimization* Measuring the output of procedural generators for comparison and optimization.
10:30	Evan Sampson (Torsten Hahmann)	*Common Logic Editor* A lightweight IDE for Common Logic (CL), built on the Macleod ontology development environment
10:45	BREAK	
11:00	John San Diego (Richard Corey)	*VR Sculpting App* A sculpting app built for VR which has the basic tools for beginners, along with a goal-based tutorial system
11:15	Edmond Xiao (Roy Turner)	*Budget and Loan Manager* Android application to help young adults with financial bookkeeping and planning.
11:30	Nathan Mathis (Roy Turner)	*Bear Bucks on the Blockchain* A web-based wallet and API that is capable of storing and transferring cryptocurrency asset tokens (such as Black Bear Bucks) distributed through universities
11:45	Eddie Abbondanzio (James Fastook)	*Voxelated* Multiplayer voxel terrain engine implemented within Unity that allows players to join together to build worlds comprised of blocks
12:00	Timothy Bruce (James Fastook)	*Geometer's Planetarium* VR/Leap Motion simulation of the solar system for educational purposes
12:15	Liz Demin (James Fastook)	*Optimal Path Search with Procedural Generation in a Video Game* A top-down, 2D, Rogue-like exploration game that ensures that a procedurally-generated level can be consistently completed by the player
12:30	LUNCH (1:15 Set up posters)	
1:30	Poster Session	
3:30	Closing	

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POSTERS

Voxelated	Eddie Abbondanzio (advisor: James Fastook) Multiplayer voxel terrain engine implemented within Unity that allows players to join together to build worlds comprised of blocks
University Admission Guide: A Web Application	Numan Al Bakir (advisor: Sudarshan Chawathe) A web application that guides prospective students through the steps of admission to their desired universities by providing information about the universities and a means of communication with their representatives
Job Grader Android App	Paul Arabatzis (advisor: Roy Turner) Using data scraping and personal information in order to provide an overall grade for a job with suggestions for job opportunities and current employment
Geometer's Planetarium	Timothy Bruce (advisor: James Fastook) VR/Leap Motion simulation of the solar system for educational purposes
IoTProfiler	Jake Collupy (advisor: Larry Whitsel) A system for creating firewall rules for IoT devices
Natural Disaster Application	Andrew Cramer (advisor: Silvia Nittel) A crowd-sourced natural disaster application, focused on collecting and displaying user feed data
Optimal Path Search with Procedural Generation in a Video Game	Liz Demin (advisor: James Fastook) A top-down, 2D, Rogue-like exploration game that attempts to ensure that a procedurally generated level can be consistently completed by the player
Green Home Advisor	Connor Gordon (advisor: Silvia Nittel) A mobile application, driven by real-time sensor data streams that track your home's temperature, humidity, and electrical consumption
Foot-Fault Detection System	Todd Hawkins (advisor: Silvia Nittel) Image processing application that detects foot-faults in tennis
Forestry Finance Manager	Jackson Hey (advisor: Silvia Nittel) A web application for the Forestry Department to track and manage their land owner donations
Athletic Data Aggregator and Meet Manager	Ben Jeffrey (advisor: ilvia Nittel) Easy-to-use application for managing the data associated with track meets
UMAINE Classroom Finder	Nicholas Levecque (advisor: Kate Beard) A navigation application for the campus that will give the user directions to their desired classroom

Connecting to Begin a Community Energy Project	Katelyn Manzo (advisors: Silvia Nittel & Sharon Klein) Social media expansion of the Community Energy US website (www.communityenergyus.net))
Bear Bucks on the Blockchain	Nathan Mathis (advisor: Roy Turner) A web-based wallet and API that is capable of storing and transferring cryptocurrency asset tokens (such as Black Bear Bucks) distributed through universities
NHL Game Predictions with a Neural Network	Brysen Monahan (advisor: Roy Turner) A neural network designed to predict the outcome of single NHL games using a wide array of available statistics
Procedural Generation Optimization	Justin Norman (advisor: Torsten Hahmann) Measuring the output of procedural generators for comparison and optimization
Interactive Cell Model	Matthew O'Brien (advisor: Roy Turner) A 3D model of a cell for teaching students and keeping them engaged
Broad Phase Collision Detection in Unity	Henry Owen (advisor: James Fastook) Overarching collsion detection algorithm that chooses a broad phase algorithm based on environmental factors, implemented in Unity
iBeacons: A Wandering Solution	Rob Owens (advisor: Richard Corey) Using iBeacons to monitor residents with early dementia and to notify care providers should wandering occur
Movie Library with Recommendations	Zach Papka (advisor: Larry Whitsel) An application that gathers, streams, and recommends movies
Subset-Sum Analysis	Patrick Pettegrow (advisor: Torsten Hahmann) Finding characteristics of problems to determine the best algorithm for solving them
LOSSS	Noah Ransom (advisor: Torsten Hahmann) A simulation environment for representing a simple security agent
An Evolutionary Approach to Tic Tac Toe	Avery Rossow (advisor: Hames Fastook) An genetic algorithm that trains a neural network to play Tic Tac Toe using evolution rather than back propagation. The scope of the project was expanded to include a playable point-and-click adventure game
Common Logic Editor	Evan Sampson (advisor: Torsten Hahmann) A lightweight IDE for Common Logic (CL), built on the Macleod ontology project
VR Sculpting App	John San Diego (advisor: Richard Corey)

	A sculpting app built for VR with basic tools for beginners and a goal-based tutorial system
Brackme	Mitchel Smith Automatic tournament generation and intelligent seeding based on previous results
Health Manager	Heejae Shin (advisor: Sudarshan Chawathe) A mobile application for helping people who need to adapt post-operative lifestyle changes
A GPS Based Study Group Formation App	Aaron Speakman (advisor: Sudarshan S.Chawathe) Connects students looking to study with others from the same courses and refines results based on location
Quantifying Code Quality: AOP vs OOP	Bren Trusty (advisor: Larry Latour) Comparing two versions of a virtual machine with software metrics
Swarm Enemy in Unity	Denmark Vesey (advisor: Roy Turner) An enemy for a hypothetical top down 2D shooting game composed of agents that swarm together
University Tutoring Application	Nicolas Ward (advisor: Silvia Nittel) An on-demand tutoring application for students to get academic help
Multi-Genre Music Generation using Midi	Brenton Wilson (advisor: Sofian Audry & Roy Turner) Three algorithms for generating multi-genre music as MIDI files by taking two input MIDI songs and merging them together in interesting ways
Budget and Loan Manager	Edmond Xiao (advisor: Roy Turner) Android application to help young adults with financial bookkeeping and planning
PropHunt AI	Steven Zhao (advisor: James Fastook) A 3D hide and seek video game using the Unity game engine