

CS 4500 SENIOR CAPSTONE



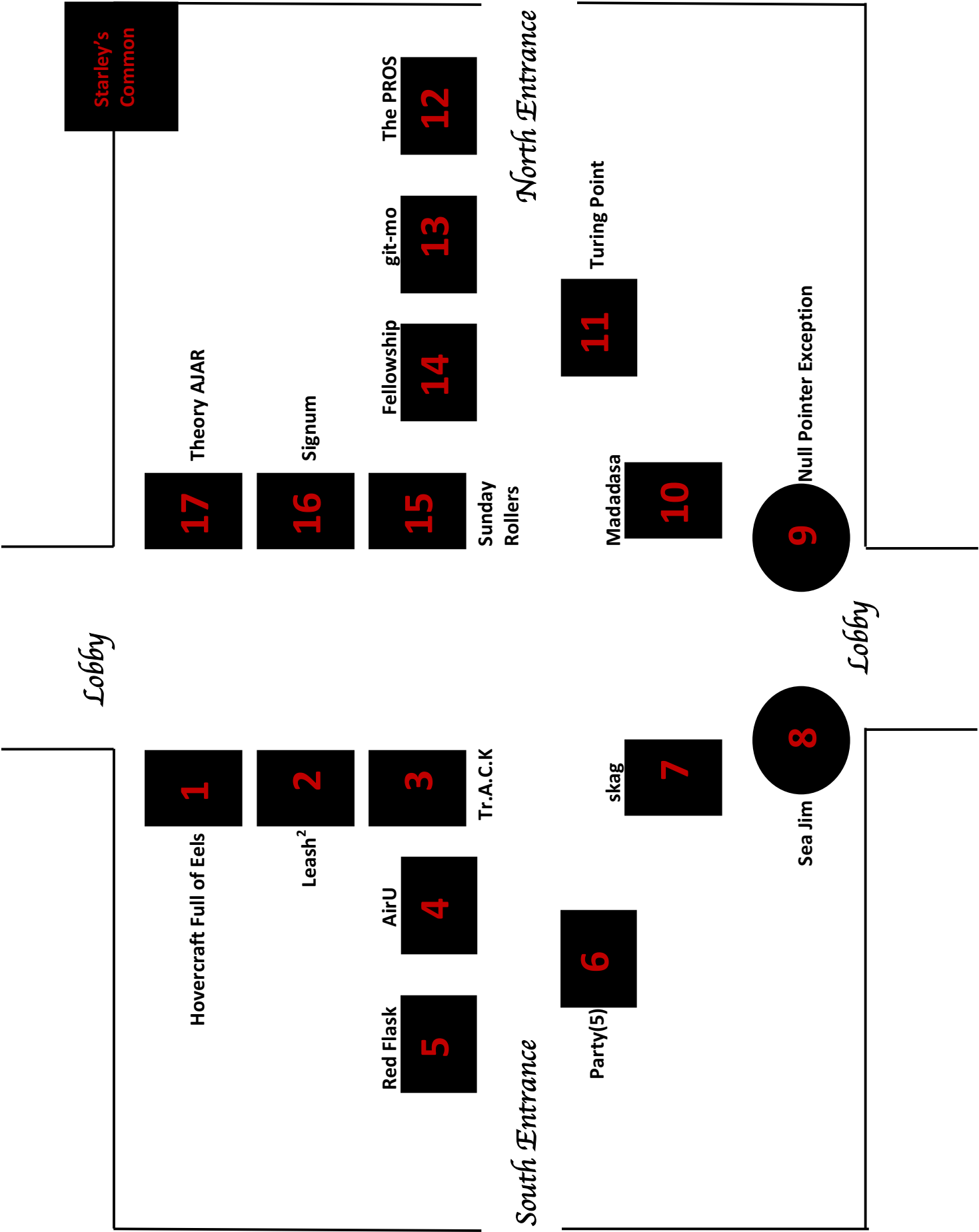
SCHOOL OF COMPUTING
UNIVERSITY OF UTAH

DEMO DAY

Catmull Gallery

1:30 – 4:30 PM

APRIL 27, 2016



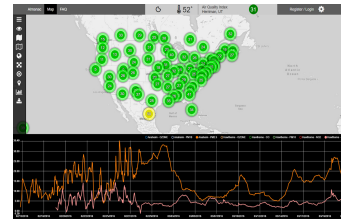
Team: AirU

Project name: AirU

Team members: Jared Potter, Jared Moore, Jach Labato, Taylor Wilson

Website: <http://air.eng.utah.edu>

AirU is a web application for gathering and presenting air quality statistics for both the casual user and the atmospheric scientist. Our application provides an interactive map that allows users to focus on specific air monitoring stations or clusters of stations anywhere across the country. Our site targets two primary users: atmospheric scientists, and casual users. For scientists, multiple stations may be selected, saved as groups, and their data compared with that from other stations and the EPA. For the casual user, air quality can be checked at a glance to determine if it's safe to be outside. Our content is user-driven, meaning you can contribute to the project by connecting your own air monitoring station to the site. From checking the current air quality conditions in Salt Lake to downloading the last twelve months of air quality data in your neighborhood, AirU has got you covered. Ask us about today's air quality and join the Airvolution today!



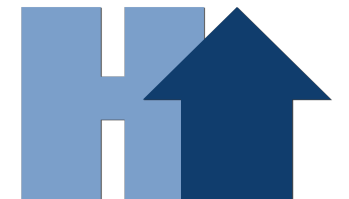
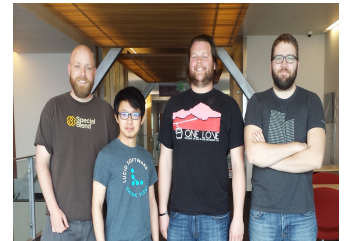
Team: FellowShip

Project name: HuddleUp

Team members: Jonathon Curry, Pin-En Chen, Benjamin Naugle, Erich Newey

Website: <http://go-huddle-up.com/>

HuddleUp is a social web-based platform with an iOS client to help people gather together to compete in games and sports. Users can join or host an event, choose an activity to play, and be grouped with others who want to play the same thing. After being matched with people, players can message one another and work out the details of the event. During play, HuddleUp offers detailed scorekeeping with highly customizable scoresheets for any kind of activity; likewise, users are able to see leaderboards comparing users and their friends in their local community. Other features include: scheduling regular recurring events, forming teams, social media integration, a community endorsement system amongst users, and location-based services.



Team: git-mo

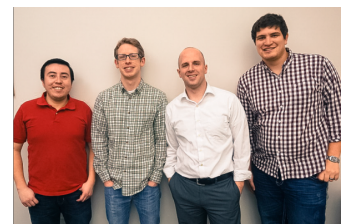
Project name: AR Sute

Team members: Brigham Diaz, Taylor Payne, Matthew Alexander, Daryl Bennett

Website: <http://git-mo.site>

AR Suite is a set of 4 Augmented and Virtual Reality mobile applications.

- JengaAR, a multi-player Augmented Reality version of the classic Jenga Game. JengaAR is also playable with Google Cardboard.
- ARora, is the Augmented Reality Optical Recognition Assistant that brings the benefits of eBooks to printed books. Hold your phone over printed text and tap the word that you want defined.
- ARiT is the Augmented Reality Image Translator. Point your phone at anything, and ARiT will tell you what that item is, in various languages.
- VR Cannon is an immersive Virtual Reality game, designed for Google Cardboard.



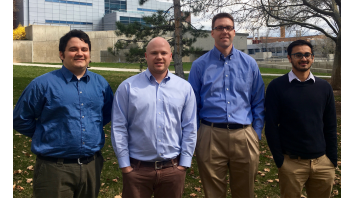
Team: Hovercraft Full of Eels

Project name: FriendsBest

Team members: Dominic Furano, Ray Phillips, Paul Hanson, Umair Naveed

Website: www.friendsbest.net

FriendsBest is a network-driven recommendation application. Traditional review sites/tools are abundantly available, but consumers are most interested in the opinions of their friends. FriendsBest allows users to quickly find recommendations for just about anything using a simple keyword search and to be notified of and respond to searches made by members of their Facebook network. These notifications serve to continually incentivize the creation of new recommendations. Imagine that your car suddenly breaks down and in a matter of minutes you are able to acquire personalized endorsements for several mechanics in your area from people you know and trust. Having opportunities to share, to help, and to receive help leads to a unique user experience which is both dynamic and rewarding.



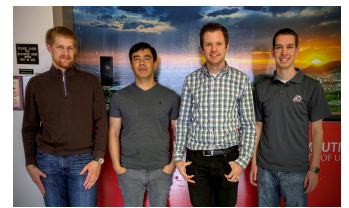
Team: Leash²

Project name: Leash²

Team members: Bo Shafer, Kevin R Hurst, Colin Wood, William Shupe

Website: <http://leashsquared.com>

Leash² brings pet services to pet owners at the push of a button. Our mobile application will bring one of our hand selected pet care experts to your doorstep when you need them. To do this, we plan to utilize secure, real time GPS tracking. This will allow users to order a pet care expert to their home but also, follow along as they take Fido for a stroll. The data stored within the user profiles, along with a user generated rating system, will enable our application to provide all end users with the information they need for selecting a pet care expert. Our initial focus will be to provide a location based dog walker scheduling application. Leash² will be the platform which makes on-demand pet care a reality for those who genuinely care about their pets.



Team: Madadasa

Project name: Principia

Team members: Sam Olds, Matthew Turner, Daniel Peterson, Dalton Wallace

Website: <http://principia.cc>

Principia is an educational physics playground emphasizing visualizations and interactivity. This web-based project is designed to help students reinforce key concepts through visualizing physical scenarios. A user can build a system by dragging and dropping elements like ramps, pulleys, or springs into a frame in their browser. Then the simulation can be run to see the elements interact with each other over time, with the ability to pause the simulation at any point and query the state of an element. Users can save their simulations and share them with others. Principia serves as a powerful supplement to any physics classroom or as a playground that would allow students to further explore concepts in a visually exciting way.



Team: Null Pointer Exception

Project name: The Clean Room Companion (CRC)

Team members: Keith Anderson, Heath French, Zachary Myers, Zella Urquhart

Website: nullpointerexception.noip.us

The Clean Room Companion (CRC) will help make lab environments both safer and more accessible to personnel. Designed as a laboratory watchman, the CRC is a semi-autonomous robot that uses telepresence to enable a laboratory user to be in a lab without a partner present. In addition, CRC is able to maintain a map of the area it is working in and rapidly adjust to any changes in its environment to help it maintain observation of its lab partner. Gone are the woes of trying to find a person to accompany you, CRC is here!

Team: Party(5)

Project name: PlayED

Team members: Jessie Delacenserie, Andrew Consiglio, Maria Jenkins, Christopher Hartley, Dustin(Jay) Tuckett

Website: www.playedsmart.com

PlayED is a comprehensive learning system designed to simplify teacher-student interactions. Our software allows elementary school instructors to transfer entire homework assignments into a game, making practice more enjoyable for students and grading more manageable for teachers. PlayED provides real-time data to instructors and displays student progress in several intuitive forms. By exploiting these analytics, educators can cater assignments to individual students based on their specific strengths and weaknesses.

Team: Sea Jim

Project name: RoboUtes

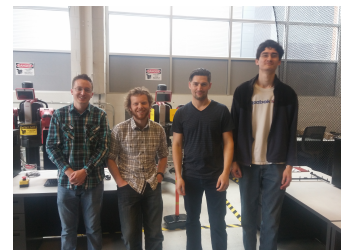
Team members: Damon Earl, Matthew Monahon, Christopher McAfee, Vincent Holt

Website: [http://roboutes.damonearl.com /](http://roboutes.damonearl.com/)

The Sea Jim project involves building a telerobotic planetary rover platform as the Computer Science members of the RoboUtes, which is a multi-disciplinary team of engineering students with the goal of competing at the RASC-AL ROBO-Ops competition hosted by NASA and the National Institute of Aerospace. The rover must compete while being under direct control of each team's Mission Control, located at the home campuses of the competing universities. A sophisticated sensor suite allows for automatic diagnostics and error notifications for the support team in mission control. Aggregation of this data during development and testing supplies the team with rich historical data to draw on to aid in problem diagnosis. A robust, easy to use, and information rich HUD/UI for the driver and arm pilot is implemented to facilitate intuitive control. Mission control operators will use some of the rover's many onboard cameras to find target rocks and mark them in the pilot's HUD, allowing the pilot to focus on retrieval instead of target location acquisition. Compiling this together with automatic streaming optimization, will bring together a fully functional rover that is easy for users to operate.



PLAYED



Team: Red Flask

Project name: Lamplight

Team members: Phillip Shaw, Christian Gallegos, Colin Probasco, Jonathan Sanderson

Website: <http://www.teamredflask.com/>

Lamplight is an adventure role-playing game styled after old-school top-down dungeon crawlers. This game was built in the Unity game engine. Set in a mysterious and dangerous dungeon, you as the player will use your sword, magical powers, and wits to slay monsters and solve puzzles. Every path offers a new power and a new challenge, but all paths lead to the final boss. Every problem you encounter can be solved in multiple ways, making each playthrough a unique experience. Players can choose the gameplay style that best suits them, or they might try to master all the ability sets in the game. Whether you want to use magic offensively, defensively, or to avoid combat altogether, all are valid strategies.

Team: skag

Project name: SchoolBloc

Team members: Landon Gilbert-Bland, Terry Kingston, Ryan Saunders, Ben Andrews

Website: <http://schoolbloc.co/>

Currently, Utah charter middle schools face the substantial problem of scheduling their students, teachers, courses, and classrooms. School Management Systems within their budgets do not even attempt a solution, and this can be a daunting task to accomplish by hand. SchoolBloc resolves this issue by utilizing a powerful solving engine and a friendly user interface. SchoolBloc interfaces with a popular School Management System by importing the lists of teachers, students, classrooms and courses. The administrator can then apply constraints to the relationships between each of these objects. For example, teachers can be scheduled to teach a given course in a given classroom. When finished, the scheduler engine searches the solution space for a schedule that meets all of the user provided constraints. The completed schedule information is then imported into the School Management System. SchoolBloc was developed with the collaboration of the Utah charter school, Vanguard Academy, who plans to use SchoolBloc as their scheduling solution in future semesters.

Team: Signum

Project name: Learning Universe

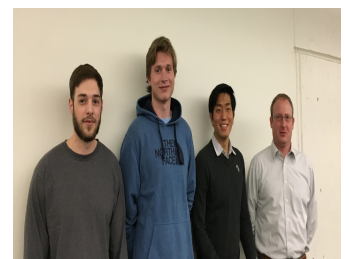
Team members: Daniel Cushing, Dustin Reitstetter, Namgi Yoon, Joseph Cottongim

Website: <http://ec2-52-33-118-140.us-west-2.compute.amazonaws.com>

Learning Universe uses the “learning map” to reimagine the structure of learning management systems. Everything from classes to concepts are visualized by nodes on a learning map. The learning map allows students to visualize the connection of classes, concepts, and assignments in a more intuitive and impactful way, and professors can track the progress of students through the course topics. Of course, students can also download lecture notes, view their grades, interact with their peers, and much more. The end result is simple, Learning Universe provides both students and professors with a more helpful and interactive learning management system resulting in an overall better learning experience.



SchoolBloc



Team: Sunday Rollers

Project-name: Megabase

Team Members: Christy Bowen, Mike Miner, Hayden Shelton

Website: <http://megabase.squarehook.com>

Megabase is a web-based tool that enables users of all skill sets to easily create document-based databases. Users will create their databases using a drag-and-drop interface to define the structure of their data. After creating their database online, they can download our Microsoft Excel Add-In and use it to upload data from any existing Excel workbook with the click of a button. Data can then be manipulated either online or using our Excel Add-In. Our form builder will allow users to collect data using customizable forms which can be embedded on their websites. Data will be stored using indices and replica sets to ensure fast, reliable access. The overall goal of Megabase is to make database creation simple for even the most inexperienced users. If you can use Excel, you can use Megabase!

Team: The PROS

Project name: Bimolive.com

Team members: Xiangyu Zhong, Shengzi Hong, Chonghuan Xia, Xueyang Han

Website: www.bimolive.com

Bimolive.com is a website featuring live broadcast lectures and presentations. The presenters/teachers will broadcast their lectures live, and the viewers/students can attend the lectures through Bimolive.com. Moreover, viewers can ask questions to presenters and get answers from presenters in real time. The lectures will also be recorded and stored for replay. During the replay, the questions asked during live lecture will be shown and the viewers can jump to a specific part of the lecture from the questions. Bimolive.com is an innovative solution to online learning, it creates a platform for real time interaction and communication between students and teachers.

Team: Turing Point

Project name: Turing Point

Team members: Sean O'Connor, Tony Niven, JT Newsome, Scott Hadley

Website: <https://www.turingpointpolling.com/>

Turing Point is an educational web application that provides students and instructors with an effective, convenient, and affordable way to take and administer classroom polls and quizzes. Turing Point has been developed from the ground up, based on feedback from University of Utah instructors and students in order to create a set of tools that allow for an unparalleled learning experience. The Turing Point web application is designed for use on Desktop and Mobile platforms so that users can quickly and easily navigate and access information effectively no matter which device they are using. We utilized the fact that most students already have a mobile device and therefore will not be required to purchase 3rd party polling hardware, making it more affordable for students than other polling solutions. Our system provides rapid feedback to both students and instructors and enables them to review, analyze, and explore results in ways current systems do not provide. This promotes an interactive learning environment where students remain engaged and Instructors remain informed of their student's performance.



Team: LoLTheory

Project name: LoLTheory

Team members: James Haws, AJ Johnson, Rachel Malais, Austin O'Connor

Website: <http://loltheory.com>

League of Legends is the most popular online PC game in the world, boasting an enormous 27 million players every day, and grossing \$946 million in revenue in 2014. In the constantly changing game environment, LoLTheory (LoLTheory.com) provides League of Legends players with the information they need to stay competitive. Based on analysis of millions of LoL matches, LoLTheory allows users to learn the latest, and most effective tactics, simulate their own strategies, and receive a detailed analysis of their individual playstyle.

Team: Tr.A.C.K

Project name: CareBase

Team members: Keaton Walker, Andraia Allsop, Cody Williams

Website: www.care-base.net

CareBase is a mobile/web app that allows parents to jointly track their children's development from infant through toddler age and beyond. Parents are able to track and identify patterns for both daily occurrences that happen with their children, such as feedings, sleep, and diapers, as well as things that happen over longer amounts of time, including weight, height, and head size changes. Parents can also store important information such as vaccination information and track development milestones. Furthermore, CareBase gives parents the power to have caregivers join in the tracking and lets parents create schedules for the caregivers to use when watching their children.

