

CCS NJIT Capstone Showcase

**COLLEGE OF COMPUTING SCIENCES
13th Capstone Student Showcase**



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Senior Capstone Class
Campus Center Atrium
Monday, May 3rd, 2010
Spring 2010

CSS Capstone Program

The highly-connected entrepreneurial CCS capstone program is a lot of things to many people. For us, the “students” not the projects are the real product of the capstone. As a network of networks, the multidisciplinary capstone today is changing how classrooms operate and redefining how students learn, running a free real world open university year-round, transforming the way business work with education, enabling students to create their own business, impacting K-12 education, health care and social services in the City of Newark and NJ and partnering with the world to empower our students.

The secret to the capstone program is not having students working on industry-sponsored projects but having projects and sponsors working together for our students’ education. We hire our sponsors instead of them hiring our students. Then once these sponsors see what our capstone students can bring to the table, many of them offer full time jobs to our students. Our best alumni become advisors and mentors in the program and some become sponsors of projects. Our sponsors become long-term partners rather than short-term employers. This is how our program uses the real world to re-define learning and teaching and this is how we are able to exceed our sponsors’ expectations. Our program is able to create endless possibilities for students and industry alike and make learning more exciting, challenging and relevant. We are a true learning organization that adapts to change and responds rapidly to students’ and industry feedback.

When we gave our students the driver’s seats, we became mission impossible. The sky is not even our limit. This booklet is a proof of that. I would like to dedicate it to every student in capstone Spring 2010 semester and congratulate our students from the bottom of my heart for a job well done.

**Capstone Spring 2010 class,
you surprised the world!**

Sponsor: NJIT Senate
Project: Find My Advisor
Track: Educational Technology
Students: David Nagrosst, Robert Reese

A website designed for current and prospective NJIT students promoting easy access to information regarding academic advising. The website allows students easy access to advisor contact information and location with one easy click. While browsing the site, students will find informative answers to many frequently asked questions.

Sponsor: John Wiley & Sons Inc.
Project: Mapping Data Center Environmental Conditions
Track: Communications, Networking, Signal Processing
Students: Erica, Feldman, Adam Forbes, Jason Pearson, Eric Rivera

Our proposal was to design a robot that would autonomously navigate a data center and take the temperature and humidity of the room at ankle level, waist level, and eye level. This information would then autonomously be given back to a base computer that would graph and model this data over a 3-D map of the room, with colors indicating too warm, too cold, or correct temperatures. This robot is designed to be time and cost efficient for the user to collect this data. A fallback component built into the robot is navigation following a preset line in the floor of a data center. As part of the robot hardware, there will be a micro-processor capable of collecting the data and storing the hash information before transmission to a base computer, which would convert the hash data into useable and viewable data.

“Capstone is changing how
classrooms operate and redefining
how students learn”

Sponsor: ISP

Project: Budget Automation

Track: Financial Information Systems

Students: Richard Heddy, Sahil Choudhary, Alexis Abreu, Josh Kotz

Our project involves automating the budgeting process for International Speciality Products(ISP). We are using ISP's internal network and using various web-languages to create a user interface that are tailored to the permissions of the user. We created a database in SQL that will take information both from excel sheets and our interface through ASP .NET using views, extrapolated data, and formulas. We then create reports based on ISP desired specifications.



Sponsor: Communities In School

Project: Pimp My School

Track: Educational Technology

Students: Brian Piccoli, Erdal Gerda, Alexander Medina

Our group is focusing on upgrading the current technology setup inside the Communities in School building. Our main focus was on installing monitors and PC's throughout the building and making them accessible remotely, from either inside the building or from an outside location. We tested a few different remote access software applications and ended up using LogMeIn.com to access the PC's. The purpose of this is to be able to update and control the content on the monitors with school announcements, school projects, and general information.



Senior Capstone Executive Team

Students: Sameer Govil, Lilia Garay, Keving Wagnon, Marilyn Mereles, Jason Pearson, Christopher Lee Cora, Erica Feldman

This dynamic group of individuals was elected by the class to help make their capstone experience rewarding. The capstone team worked closely with Professor Eljabiri, to organize and implement the variety of events/meetings held throughout the semester for our capstone students. They were responsible from everything such as the logistics to marketing of every event. In addition, the team lead and organized numerous hands-on technical workshops, initiated the capstone program 2-3 weeks before the beginning of the semester, trouble shoot all projects, and mastered capstone web presence in multiple websites. The team, which met a minimum of three times a week, also helped spread the Capstone educational opportunity to high school students. The Executive Board members were in charge of communicating, mentoring, and helping their fellow peers to succeed in their projects. However, their biggest task at hand was the planning and executing of the final CCS Capstone Showcase.



Sponsor RDE Systems

Project: Messaging System

Track: Healthcare Technology

Students: Pawel Bokota, Matthew Genberg

For our project we worked with RDE Systems to help develop eCOMPAS (a web-based system for networks of care). Our tasks included creating a webmail system as well as an instant messaging system. In order to implement these systems we made use of database management software and a coldfusion server. During our time at RDE we learned many practical, real-world programming skills. Some of these skills included software design, time and project management, and collaborative programming. Overall, we had an excellent Capstone experience.



Sponsor: Innovation Acceleration Center of NJ

Project: MAVE

Track: Software Application

Students: Felix Montanez, Shadi Eltokhy, Anthony Alicea

Mave is the next step in social networking. As the social networking and the technology it uses evolve, the capabilities and potential of the applications grow as well. Mave is an application, the first of its kind that uses location-aware devices and profile matching to bring people together. Mave is built using a Java Development Kit, MySQL, and Bluetooth technologies. These technologies tie together to make a unique application that is the future of social networking.



Sponsor: The Nicholson Foundation

Project: Early Childhood On-Line Tools

Track: Early Childhood Education

Students: Yehoshua Kaplan, Lynda Meziane, Ethan Kim, Reuben Modell

The Nicholson project set out to identify technology approaches to decrease the number of Newark children not enrolled in pre-school and child-care centers. The team focused on collecting the varied requirements of diverse stakeholders - Parents, Newark Public Schools, Non-Profit agencies etc. -that would benefit from online tools that would ease the enrollment process, which in turn would encourage parents to enroll their children. Tools recommended, include an online eligibility calculator for assistance programs, an online tool that would allow vacancy information to stay up to date as well as tools for parents and providers to track application status.



Sponsor: Rutgers EDRG

Project: Rutgers ERDG Survey

Track: Education/Research

Students: James Grate, Kimberly Mark, Rohan Nigam, Nirav Desai.

The sponsor, the Rutgers Economic Development Research Group, works with the Rutgers University School of Management and Labor Relations. Conducting process and outcome evaluations for programs serving at-risk populations is a major part of the sponsor's work. An important project for Rutgers EDRG is the P2C – Prison to Community, where Rutgers EDRG conducts surveys in order to evaluate the program. Currently paper surveys are being completed by women entering and exiting the computer-based program within and outside a prison setting. Rutgers EDRG was also featured in the Star Ledger for P2C's Female Offender Reentry Group Effort (FORGE), where EDRG's research findings were commended. Our project is to help facilitate the survey taking process by enabling program directors to easily retrieve data instead of expending time entering data, and to allow them to utilize data management tools.



Sponsor: Creative Technology Partners

Project: Science Notebook

Track: Educational Technology

Students: Alberto Cabezas, Priya Udayan, Ronica Brisbon, Johmar Johnson



Our team objective this semester is the validation, testing, and analysis of the Science Notebook website, which is a website that is aimed at high school and middle school students. The main goal of the website is to get kids more interested in science and to modify the website based on the feedback we gather from the students. The website is based on Drupal, which is a content management system. Google docs are used to create the feedback form, which makes it easy for collecting and analyzing data.

Sponsor: Communities In School

Track: Educational Technology

Students: Marc Victorio, James Kim, Boney Patel

Working with the Barat Foundation and Communities in Schools of New Jersey, we are creating a lab environment for those wanting to expand their knowledge in the use of different types of computer software. For this computer lab environment, we are refurbishing, optimizing, and networking donated computers. Individuals participating in the programs offered by the Barat Foundation will be able to acquire new skills including photo editing and blogging. Open source software is being used in a Windows XP-based system environment. This project was designed with the intention of giving back to those less fortunate in mind.



Sponsor: GameMonger

Project: My Dungeon

Track: Game Development

Students: John McAnulty, Josh Beam, Jeff Lawton, Zhong Zheng



For our project we must convert an iPhone game called My Dungeon into a Facebook application. We will accomplish this task by analyzing the Objective-C code that it was written in, and then rewriting the code in an ActionScript. The program that we used to code in is called Flash Builder 4. There were a number of students interested in this project so the work was broken down into two teams with different objectives. Some of our team's objectives include: characters, objects, animations, and path finding.

Sponsor: GameMonger

Project: My Dungeon

Track: Game Development

Students: Georgios Zavalas, Christopher Ochs, Kelly Curiotto

Team Platypus with their sponsor GameMonger is entering the Facebook marketplace, and entering with a bang! Team Leader Georgios Zavalas leads Christopher Ochs and Kelli Curiotto to develop one half of the best thing since Farnville; My Dungeon! In My Dungeon; you are the villain! Your task is to stop heroes from stealing your treasure. Design your own dungeon including monsters, decorations, and traps. Then when your enemy invades see if your Dungeon has what it takes to defend itself!! Play with and against your Facebook friends!



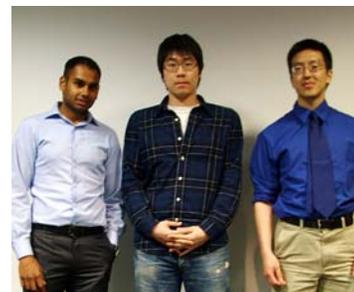
Sponsor: Pro Bono Net

Project: Pro Bono Manager Enhancement

Track: Legal Services Technology

Students: Akash Patel, Jeffrey Liu, Abraham Cho

In corporate America, Microsoft tools are becoming extremely popular and it is important



to have experience in this area. Pro Bono Net has introduced an application called Pro Bono Manager that is written in Microsoft SharePoint for all law firms to organize pro bono work in a professional manner. The essential output of the software is to generate reports based on clients, cases, and the individuals that are executing the pro bono work. General software skills that are required to continue working on enhancements to the application include SQL programming to correct the functionality of the reports that are generated.

Sponsor: Saint Barnabas Health Care System
Project: Automation of System Acquisition Workbook
Track: Healthcare Technology

Students: Parimal Patel, Naimisha Chikyala, Kevin McMorro, Jason Meier
 Our project goal is to deliver a web portal for Saint Barnabas Health Care System (SBHCS) that will automate the Systems Acquisition Workbook. Currently, Saint Barnabas is performing such tasks manually using an excel spreadsheet. Our project will facilitate a way for users and administrators to enter, edit, and manage information using a web based interface. Our interface was created using ASP.NET and Microsoft SQL Server 2008 database. The goal of this project is to introduce new equipment into the SBHCS. This capstone project a real world hands on learning experience. We learned how to set up HTTP server, create databases, implement SSL, ASP.NET (server-side scripting), HTML, Visual Basic, CSS and set up user sessions. This project is essentially covers the entire umbrella of web-engineering.



Sponsor: Saint Barnabas Health Care System
Project: SBHCS Web Portal
Track: Healthcare Technology
Students: Shiven Shelat, Sanket Rao, Pinank Mashruwala

A Web Portal, also known as a links page, presents information from diverse sources in a unified way. The primary purpose of this web portal is to create an internal website for each department to assimilate their own information for the executive staff. In order to develop this project we incorporated our skills in PHP, HTML, SQL and Adobe CS4 suite. Pursuing total quality, educating users and delivering our best is the most vital aspect of our group.



Sponsor: BluePrint Health Care IT
Project: BA-Connect
Track: Information Technology
Students: Roberto Garcia, Jason Mejia

Hospitals/Organizations have difficulty in contacting vendors for the renewal and expiration of their Business Associate Agreements. The larger the organization, the larger the list of vendors they depend on. Thus, the complexity in contacting and keeping up with the vendors and their agreements increases dramatically. The purpose of the BA-Connect is to minimize the trouble for the large organizations while maximizing search responsiveness and making assessments on expenses and dates due on the agreements. By storing the agreements on a centralized online repository, BA-connect allows for both organizations and vendors to work together in a synergistic manner, easily contact one another, and at the same time be alerted by email when any changes are made to the agreements and/or when agreements are going to expire.



Sponsor: Rutgers Teem Gateway
Project: TEEM Gateway - Network Infrastructure Revamp
Track: Educational Technology
Students: Adrian Rogers, Bryce Florek, Forman Shmeley

Our project focused on meeting and exceeding the forward looking needs of our sponsor by creating a network infrastructure to support their future endeavors. Rutgers TEEM Gateway and the YES Center desire to provide a top of the line education to its students by utilizing the best that current technology has to offer. Our job was to assess the current network infrastructure and implement changes to meet their desires. By mapping the network, upgrading the network hardware, and moving to a faster Internet Service Provider we have increased efficiency and lowered IT costs.



Sponsor: Technology High School
Project: Green Roof Project
Track: Educational Technology
Student: Annie Valembun

Working and assisting Technology High School students with their current architecture class project (creating a green roof for their school) through digital and physical models, critiques, creating a tutorial for an architecture program (Sketch-up), and the Pepsi Refresh challenge.



Sponsor: Innovation Acceleration Center of NJ
Project: Word Herd
Track: Information Technology
Students: Edbert Aguila, Jaymin Goswami, Robert Szpilla
 Our project is a word dictionary with a social community that accepts and displays humorous user-generated sentences. This makes looking up words in a dictionary educational and fun.



Sponsor: Star Ledger
Project: Star Ledger Reader Portal
Track: Media Technology
Students: Hector Lopez-Silvero, Paul Maranski

The Start Ledger Reader Portal is a tool that the Star Ledger editors can use to create surveys that can be published online. The address to these surveys will be published in the periodical, which a user will be able to access to give their opinion on a variety of topics. The information gathered through these surveys can be used in future articles and strengthen the relationship between the periodical and the reader community.



Sponsor: Newark Technology High School

Project: CISCO Lab Upgrade

Track: CISCO Networking

Students: Christopher Miller, Jake Blakely, Luv Shah, Michael Banos

Our main goals are to become CCNA certified through an official CISCO Networking Academy and upgrade the lab itself. Our team has been trained under instructor Mr. Omar Firas, and successfully started the order process for updated equipment. Our main vision



is to allow training for NJIT students at low cost and eventually the community. We are trying to lay the groundwork for building future CISCO labs. This project has been very hands on and we've gained extensive networking knowledge. Overall this has been an excellent learning experience and we would recommend similar CISCO networking related projects to all future students.

Sponsor: Newark Technology High School

Project: Online Tutoring System

Track: Educational Technology

Students: Robert Chavez, Chuan-Wei Chang, Paul Maranski

The purpose of this project is to carefully layout the blueprint for an online tutoring system for Newark Technology High School. The system would allow student to be paired up with tutors via an online scheduling system. The three main skills that were needed to fully design this system are: HTML, PHP, and MySQL database. HTML was used to design the website. PHP was used to pull and display data from the database. MySQL was used for storing all the records such as teachers, students and available tutors.



Sponsor: Saint Barnabas Health Care System

Project: Change Control Update

Track: Information Technology

Students: Sharath Abraham, Chaz Hobson, Chris Smith, Cuong Hoang

Change Management (change control) is a method of keeping track of changes - both simple and advanced- within a company. Through the capstone program, we are working with St Barnabas Health Care System to improve their current method of submitting, approving, and implementing changes. Our main focus has been improving policies that oversee the current change control process. By the end of our project, we hope to begin implementing these policies into their new ticketing program TrackIt.



Sponsor: Newark Public Schools

Project: Balanced Scorecard Initiative

Track: Educational Technology

Students: Miriam Raczynski, Joaquin Montoya Shanti Mitchelson, Romel Montoya

Balanced Scorecard Initiative is a performance management system currently being implemented by Newark Public Schools (NPS). As NJIT Capstone students, our function in this project was to gather information and develop a data dictionary of all of the applications and functions within the NPS organization. Please visit <http://www.nps.k12.nj.us>



Sponsor: Blueprint Health Care IT

Project: Consultant Connect

Track: Healthcare Technology

Students: Michael Radzin, Paul Del Priore, Dan Buhler

Consultant Connect is a project developed by Blueprint Healthcare IT that addresses the growing demand for jobs in the healthcare industry. Befitted with a simple interface,



prospective employees are able to search through hundreds of job opportunities in the healthcare industry and apply to those that match their qualifications. The registration process guarantees complete confidentiality since we have masked the facility names and encrypted any resumes sent in with SHA1. Consultant Connect is written in AJAX, PHP, MySQL, and Javascript. Some of the software we used was Notepad++, Dreamweaver, and Photoshop Illustrator.

Sponsor: SetSee LLC

Project: SetSee Prototype

Track: Software Development

Students: Josh Rosenhanst, Jason Martin, Tarik Vhora

Our Capstone project is for startup the company called SetSee LLC, which was founded by Timothy Gill. The objective of the project is to design a prototype for the SetSee product which is a new idea to browse sets of information. We achieve this by using Javascript and XUL to create a Firefox web browser extension to exhibit the SetSee idea. Given a set of information and search terms the extension will dynamically shrink the webpage only displaying matched parts of the set, highlighting the terms found. We believe that SetSee can provide an additional search tool to help you really zero in on the information you want.

