

# **CS-ACTIONS**

## Software Plan

By: **MAKER Technologies**

**Marissa Bianchi:** Team Leader

**Kaitlyn Boomhower:** Developer and Co-Webmaster

**Eduardo Luiz Cabral Da Silva:** Database Administrator

**Ryan Clancy:** Lead Developer

**Andrew Reynolds:** Webmaster

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## System Definition

### 1.1 Problem Definition

The clients, Dr. Breimer and Professor Matthews, are looking for an application to keep track of all of the Computer Science Alumni. Dr. Breimer and Professor Matthews would like the application to be a web page built off the Siena Computer Science Department website and they would like this web page to include the job title and name of employer for each alumnus. Dr. Breimer and Professor Matthews would also like to include a map with pins indicating high schools associated with each Computer Science Alumni.

### 1.2 System Justification

Dr. Breimer and Professor Matthews are looking for an application that showcases computer science alums accomplishments in the working world. This tool would be directed towards prospective students as well as current computer science majors to showcase alumni's professional accomplishments and also provide them with advice.

### 1.3 Goals for Project and System

The main goal is to create a system that is easy for alumni to access and easily understand. The system is designed for alumni to enter information about their current and past positions as well as what companies they have worked at. A goal for the future would be to have this application used in other departments at Siena College.

### 1.4 Constraints to the System and the Project

- Compatibility with the most up to date releases of web browsers, as well as older versions
- Screening mechanism so that no inappropriate content gets posted to the application
- Ensure all user information is stored securely

### 1.5 Functions to be Provided

- User sign-up
- Profiles for each alumni with all given information
- A map showing pins for each high school, as well as place of employment of alumni

## 1.6 User Characteristics

Alumni will be able to fill out a form that will trigger the creation of a profile on our system. They will be able to edit their profile, view other alumni profiles, and possibly connect with other alum. Administrators will be able to reach out to alumni to inquire for participation, and remove inappropriate content. Administrators will also be able to delete alumni profiles. Prospective students will be able to view the interactive map and view profiles of participating alumni. Graduating seniors will be able to view an interactive map and view profiles of participating alumni, giving them the possibility to network with professionals in their potential field.

## 1.7 Environments

### 1.7.1 Development Environment

#### PC:

Operating System: Windows 7 Enterprise (x64) Service Pack 1 (build 7601)  
Processor: 3.20 gigahertz Intel Core i5-3470  
RAM: 6100 Megabytes Usable Installed Memory  
HDD: 499.78 Gigabytes Usable Hard Drive Capacity

#### MAC:

Model Name: iMac  
Model Identifier: iMac12,1  
Operating System: OS X Lion 10.7.5  
Processor Name: Intel Core i5  
Processor Speed: 2.5 GHz  
Memory: 4GB  
HDD: 500GB

#### Server:

Server Name: oraserv.cs.siena.edu  
Operating System: CentOS 5.2 (final)  
CPU: Intel Xeon 2.66 GHz CPU  
RAM: 8 GB of Memory

### 1.7.2 Operating Environment

CS-ACTIONS will be a web-based application and will be able to run on any operating system including, Mac, Windows, or Linux, and on any browser such as Google Chrome, Mozilla Firefox, Microsoft Internet Explorer, or Apple Safari.

### 1.7.3 Maintenance Environment

Most of the maintenance to this system will be done in the Software Engineering lab on the machines listed in section 1.7.1.

## 1.8 Solution Strategy

CS-ACTIONS will be completed by following a variation on the classical waterfall model. This will ensure all requirements are met. See section 2.1 for details on these steps.

- Software Plan
- Requirement Specifications
- Preliminary Design
- Detailed Design
- Development and Testing
- Acceptance Test

## 1.9 Priorities of System Features

The main goal of CS-ACTIONS is a collection of profiles of computer science alumni that is available to the public. These profiles should only be editable by the owner of the profile. CS-ACTIONS will display these profiles in a way that is visually appealing and easily understood by the user. Another priority of this system is to have an efficient way to reach out to the alumni and ask for their participation. This outreach should contact as many alumni as possible and provide a form that can be filled out in a minimal amount of time.

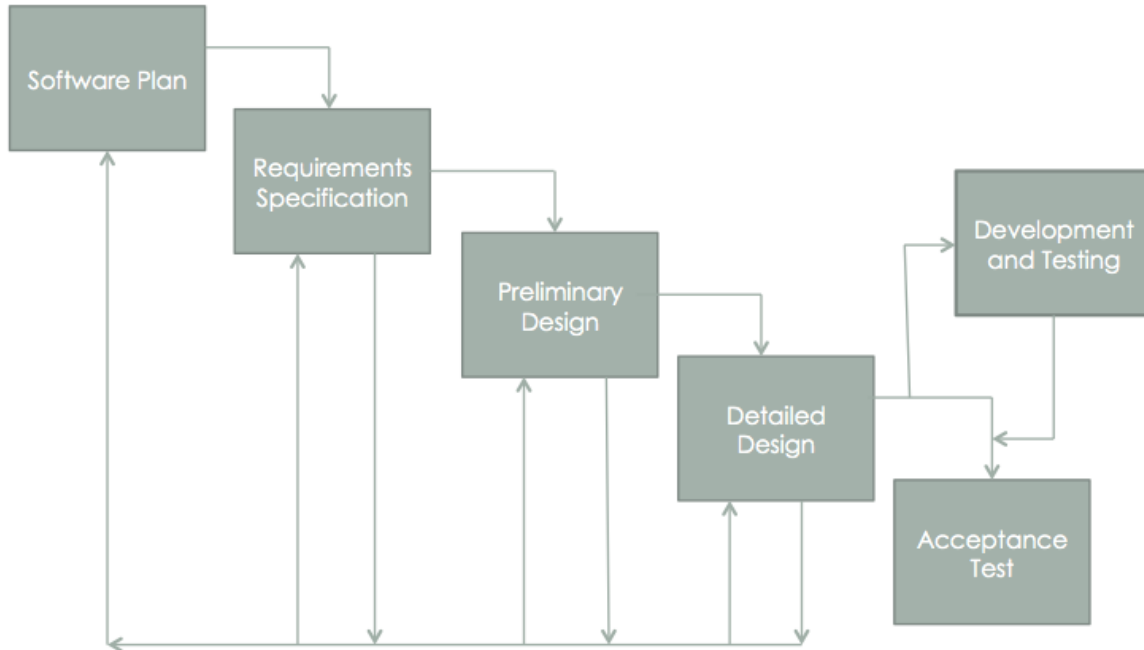
### 1.10 Acceptance Criteria

CS-ACTIONS will contain the following features:

- Alumni will be able to:
  - Create a profile
  - Share their experiences with the Siena community
  - Possibly connect with other alum
  - Have a customized social network to keep in touch with fellow Siena CS grads
- Faculty will be able to
  - Reach out to alumni and ask for participation
- Prospective students will be able to:
  - View an interactive map with the locations of all participating alumni
  - View the profiles of alumni from any area they wish (aimed at finding alumni from their hometown/high school)
  - View the accomplishments of Siena CS grads
- Graduating Seniors will be able to:
  - Use the map as a resource to see what alumni are doing today
  - Contact alumni who wish to be a point of contact for their company in search of jobs

## Project Plan

### 2.1 Project Management & Development Model



- Software Plan**  
 MAKER Technologies will gather information from the clients, Dr. Breimer and Prof. Matthews, to define the problem and create a plan for the project.
- Requirements Specification**  
 MAKER Technologies will further define CS-ACTIONS to meet the specifications and requirements given by Dr. Breimer and Prof. Matthews.
- Preliminary Design**  
 Develop a basic outline and design based on the specifications provided by the clients.
- Detailed Design**  
 MAKER Technologies will create a finalized solution based on the preliminary design. To do so, MAKER Technologies will meet with and present the design to the clients. If the clients are satisfied with the design, it will be refined and elaborated.
- Development and Testing**  
 The design will be developed into a working application. Testing will occur iteratively through the development process as we receive further input from our client.
- Acceptance Test**  
 MAKER Technologies will present the finalized system to the clients. The final application should be functional and ready to go live on Siena's Computer Science Department website.

## 2.2 Organizational Structure

<u>Name</u>	<u>Email</u>	<u>Phone Number</u>
Bianchi, Marissa	mi06bian@siena.edu	(518) 527-1079
Boomhower, Kaitlyn	kr31boom@siena.edu	(518)795-4034
Cabral Da Silva, Eduardo Luiz	e09luiz@siena.edu	(518)423-3605
Clancy, Ryan	rw08clan@siena.edu	(845)-222-8882
Reynolds, Andrew	at31reyn@siena.edu	(508)983-4494

### **Marissa Bianchi** - *Team Leader*

The team leader is the main point of contact between Dr. Fryling and Dr. Lim. The leader is responsible for organizing both client and team meetings and keeping track of attendance at all class and team meetings. They should see that the team is handing in deliverables on time and that these deliverables are of good quality.

### **Kaitlyn Boomhower** - *Developer & Co-Webmaster*

The Developer & Co-Webmaster will aid the Lead Developer in programming and the Webmaster in creating and maintaining the website for MAKER Technologies. The Developer & Co-Webmaster will also keep track of records.

### **Eduardo Luiz Cabral Da Silva** - *Database Administrator*

The Database Administrator is responsible for the database created for CS-ACTIONS. This involves all aspects of the design and maintenance.

### **Ryan Clancy** - *Lead Developer*

The Lead Developer will oversee the design and development of the system. They should help team members with any problems concerning the system.

### **Andrew Reynolds** – *Webmaster*

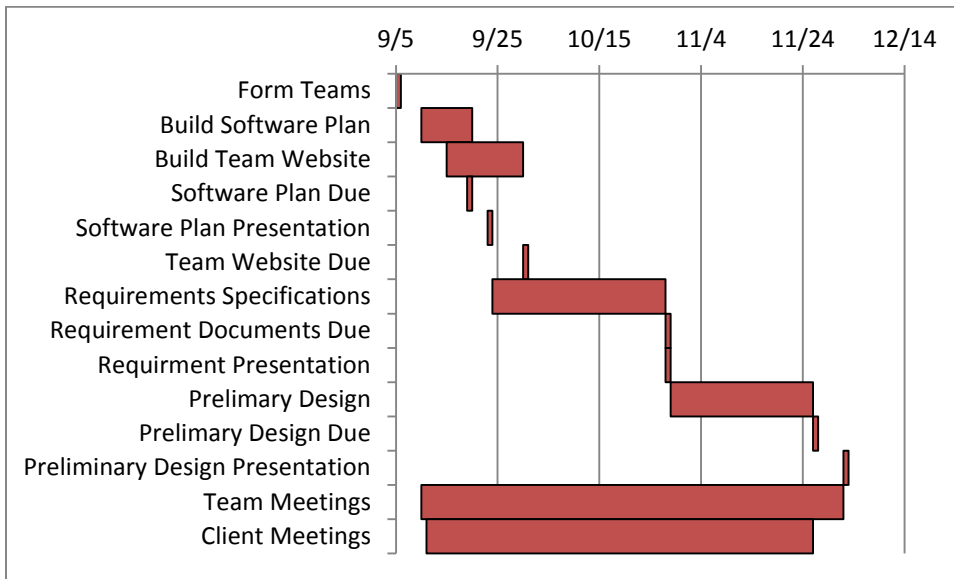
The webmaster will create and manage the team's website and be responsible for all maintenance. This involves updating information and uploading all of the team's documents.

## 2.3 Preliminary Staffing

CS-ACTIONS will work with the clients Dr. Breimer and Prof. Matthews and with faculty members Dr. Fryling and Dr. Lim. Each member of MAKER Technology will hold a different position and be responsible for the tasks outlined for that position throughout the project. The team consists of a team leader, webmaster, lead developer, developer & co-webmaster and a database administrator. The responsibilities of each position are outlined in section 2.2.

### 2.4 Development Schedule-Timeline

<u>Task</u>	<u>Time Span (days)</u>	<u>Start</u>	<u>Finish</u>
Form Teams	1	9/5	9/5
Build Software Plan	10	9/10	9/18
Build Team Website	15	9/15	9/29
Software Plan Due	1	9/19	9/19
Software Plan Presentation	1	9/23	9/23
Team Website Due	1	9/30	9/30
Requirements Specifications	34	9/24	10/27
Requirement Documents Due	1	10/28	10/28
Requirement Presentation	1	10/28	10/28
Preliminary Design	28	10/29	11/25
Preliminary Design Due	1	11/26	11/26
Preliminary Design Presentation	1	12/2	12/2
Team Meetings	83	9/10	12/1
Client Meetings	76	9/11	11/25



### 2.5 Project Monitoring Mechanism

In order to stick to the development schedule, MAKER Tech will meet, at a minimum, once every week and in some cases twice weekly. In addition, Maker Tech will meet with the client at least once a week. This will ensure that all those affiliated with the project will constantly be aware of its present stage of development. If for some reason any person is unavailable for in person meetings they will be made aware of the current situation through either email or other group chat applications. Making certain all those involved are kept in contact by some means on a regular basis will ensure the team’s success.



## 2.6 Tools and Management to be Used

The MAKER Tech team brings together a wealth of diverse skills, experience, and knowledge. This assortment of skills includes Object-Oriented Programming, Database Management, Web Application and Website Development, Algorithm Analysis, Data Structures, and Network Communications. In addition, several members have gained experience from internships that will only serve to aid our mission.

## 2.7 Programming Languages

In addition to the skills mentioned above, the MAKER Tech team brings together knowledge of a multitude of programming language including, but not limited to, HTML, MySQL, JavaScript, and Java. As we gain a more thorough understanding of the task at hand, and what it will require, more languages may be considered and necessary research will be done.

## 2.8 Testing Requirements

Our team will ensure our software application is functional by continually testing through the development step. Our testing will include creating sample data such as test alumni profiles, test maps, and test alumni submissions. The test alumni profiles serve the purpose of ensuring our database can handle our desired amount of alumni information before our prototype is ready to be delivered to our clients. The test maps will ensure that our mapping interface will withstand a variety of different abnormal cases, such as alumni from out of the area and out of the country. The test alumni submissions will test our screening process that integrates an alumni survey into said alumni's profile on our system. Testing will not be done only at the conclusion of our first system but will be done continually throughout the year to ensure that all parts of the system can be integrated together with minimal errors. Testing will be done with input from our clients to ensure that the system will meet their every need. Before our system will be released for public use it will need to pass a strict series of tests that ensure it will be able to withstand rigorous use.

## 2.9 Supporting Documents

This software project will have five main document deliverables as our team works through the development process. The documents will be showed to our clients to ensure a clear line of communicate and to avoid any unwanted surprises in the end result of our product. We believe it is essential to keep our clients up to date with our continual progress. The five documents are listed as followed:

- Software Plan
- Requirement Specification
- Preliminary Design
- Detailed Design
- Acceptance Test

## 2.10 Time of Delivery & Presentation

The following documents will be delivered by the required deadlines. The documents and dates are as follows.

Document	Date of Delivery	Date of Presentation
Software Plan	September 19,2014	September 23,2014
Requirement Specification	October 28,2014	October 28,2014
Preliminary Design	November 29,2014	December 2,2014

## 2.11 Sources of Information

Our team will gather information through our clients, Dr. Breimer and Professor Matthews. Our clients will assist us in gathering Siena alumni in order to implement our web application effectively with live data. Information will also come through the instruction given to us in lecture by Dr. Fryling and in lab through Dr. Lim. Any other information needed in the development of our application will come through research and previous expertise.

## Appendices

### Appendix A: Resumes

[Marissa Bianchi](#)

[Kaitlyn Boomhower](#)

[Eduardo Luiz Cabral Da Silva](#)

[Ryan Clancy](#)

[Andrew Reynolds](#)

**Marissa Bianchi**

76 Rotterdam Drive  
 Glenmont, NY 12077  
 Phone #  
 mi06bian@siena.edu

**Education:**

*Siena College- Loudonville, NY* –BS Computer Science, BS Mathematics  
 Expected graduation May 2015 GPA: 3.47

**Achievements:**

*Dean's List, Presidential Scholar, Upsilon Pi Epsilon*

**Computer Skills:**

*Proficient in:* Java                    *Experience with:* C++, Assembly MIPS, HTML, PHP, MySQL, CMS, Dreamweaver

**Relevant Course Work:**

Intro to Programming, Data Structures, Assembly Language and Computer Architecture, Object Oriented Design and Programming, Analysis of Algorithms, Database Management, Computer Graphics, Web Application Development, App Development , Software Engineering I

**Employment:**

***REU*** – *Siena College – Loudonville, NY – Summer 2014*

Siena's Environmental Review Project – computational linguistics and machine learning to interpret comments

***Computer Use Consultant*** – *McCormick Family – Menands, NY - January 2014*

Trained client on use of personal computers and software, recommended by Siena College Presidents Office.

***Summer Scholars Research***– *Siena College - Loudonville, NY – Summer 2013*

Research position working on the analysis of a “no-squeeze” Hamiltonian path

***Finance and Administration Intern (Website)*** –*Siena College- Loudonville, NY - Summer 2013 - present*

Edit Policy Manual site for Siena College.

***Enrollment Management / Admissions*** –*Siena College- Loudonville, NY - Summer 2012 - present*

Assist staff with, data entry, programming, tours, phone operations.

***Mathematics Tutor*** – *Siena College- Loudonville, NY – 2012-2014*

Meet with student 3-4 hours a week helping to learn basics of calculus.

***Web Editor*** – *Siena College- Loudonville, NY – 2012-2014*

Maintained content of Siena College web pages and have created/edited pages for several administrative departments

**Activities:**

*Girl Scouts* – lifetime member, support local scout community, Silver Award

*Ambassadors Club* – tours and Admission events during the school year. Lead guide for special events.

*Siena Cheerleading Team*– cheer for both Men's and Women's basketball teams

*Red Cross Club* – help organize blood drives and annual Saints Race for the Red

*Women in Computing Club* – Secretary – raise interest and share opportunities in computing

*Math Club* – Vice President and Secretary – Organize math events on campus and with other organizations

*Mentors in Violence Prevention (MVP) program* – Active bystander training

## Kaitlyn Boomhower

72 Phillips Road  
Valley Falls, NY 12185  
kr31boom@siena.edu  
Phone #

### Education

#### **Siena College**, Loudonville, New York

Major: B.S. Computer Science, GPA: 3.31

Expected Graduation Date: May 2015

#### **Hudson Valley Community College**, Troy, New York

Degree: Associates in Science

Graduated: May 2012

### Related Coursework

Object Oriented Programming | Web Application Development | Artificial Intelligence Research

Introduction to Computer Science (Python) | Introduction to Programming (Java) | Data Structures

### Experience

#### **Pitney Bowes**, Troy, New York

*Engineering Intern*

June 2014 -

Present

- Improved client web application by fixing major bugs, and adding functionality
- Added tests to web application test suite

#### **Farm Family Insurance Company**, Glenmont, New York

*Career Development Trainee*

November 2013 – June

2014

- Perform functional testing of new products and features for online illustrations and applications systems
- Assist with specification development for the illustration system
- Research and report the results of system issues reported by agents

#### **Siena College**, Loudonville, New York

*Promoted to Student Manager* in August 2014

June 2012 – Present

- Hire, Train and lead workers to meet and exceed expectations of the job requirements

*Promoted to Student Human Resources Manager* in March 2013

- Make student schedule based on availability of students

*Student ITS consultant*

- Assist students and faculty with computer issues in person and on the phone
- Reinstall software, remove viruses, reimage and install new operating systems
- Diagnose technical issues in classrooms and labs

#### **Brunswick Cream**, Troy, New York

*Assistant Manager, Cashier*

June 2009 – August 2012

- Help with the hiring process and train new employees
- Open and close store and Create weekly schedule that was efficient
- Organize inventory and prepare order form for supplies and Prepare bank deposits

### Computer Skills

Applications: Jira, TeamCity, Crucible

Development Environments: JES, Blue J, NetBeans, IntelliJ

Programming languages: Java, PHP, JavaScript, Angular JavaScript, HTML, CSS, SQL, Python

### Community Service/Leadership

Women in Computing Club, *Vice President* (Fall 2013 – Spring 2015)

Grace Hopper Celebration of Women in Computing (October 2013)

Walk To End Alzheimer's (October 2012)

NYC-WiC: New York Celebration of Women in Computing (April 2012)

# Eduardo Luiz Cabral da Silva

Brazilian, single, 21 years old  
515 Loudon Rd. – Loudonville, New York, 12211  
Phone # – [e09luiz@siena.edu](mailto:e09luiz@siena.edu)

## EDUCATION

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Escola do Futuro (Bilingual School – English and Portuguese), São Paulo, SP – Brazil.  
Highschool, November 2010.

Universidade Presbiteriana Mackenzie, São Paulo, SP – Brazil.  
Information Systems, Graduation Year: June 2016.

Actual: Studying abroad in Siena College, Loudonville, NY.  
Computer Science.

## EXPERIENCE

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- Internship on Rational Support, IBM Corporation, São Paulo SP – Brazil.  
From September 2013 to July 2014.
- English Teacher for English beginners and children, CNA, São Paulo SP – Brazil.  
From February 2011 to November 2013.
- Volunteer work as a lab assistant on a computer lab in Escola do Futuro.  
From January 2012 to November 2012.

## COMPUTER AND LANGUAGE SKILLS

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- Basic Knowledge on: Java, HTML, SQL and COBOL.
- Basic Knowledge on Database and Network.
- Portuguese – First Language.
- English – Fluent – 10 years on a bilingual school.
- Spanish – Basic – 6 months of course at CNA – Brazil.

# CLANCY, RYAN

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17 Bauer Street, Tappan, New York 10983 | Phone # | rw08clan@siena.edu

## EDUCATION

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- |      |  |
|------|--|
| 2015 | Bachelor of Science, Majored in Computer Science, Minored in Economics<br><i>Siena College</i><br>Computer Science GPA: 3.56 |
| 2011 | High School Diploma, <i>Tappan Zee High School</i>   |

## SUMMARY

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I hope to enhance my skills in information technology through dedication to an IT firm that will allow me to broaden my knowledge in the field and advance my career.

## SKILLS

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- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>- Strong math competence</li> <li>- Strong math competence</li> <li>- Strong analytic abilities</li> <li>- Works well with teams</li> </ul> | <p style="text-align: center;"><u>Related Math and Science Courses</u></p> <ul style="list-style-type: none"> <li>- Data Structures</li> <li>- Object-Oriented Design and Programming</li> <li>- Analysis of Algorithms</li> <li>- Assemble Language and Computer Architecture               <ul style="list-style-type: none"> <li>- Robotics</li> </ul> </li> <li>- Android Application Development               <ul style="list-style-type: none"> <li>- Database Management</li> <li>- Software Engineering</li> </ul> </li> </ul> |
|--|---|

- 
- |             |  |
|-------------|--|
| Summer 2014 | Intern Network Engineer, <i>Computer Design and Integration, LLC</i> <ul style="list-style-type: none"> <li>· Observed day to day tasks taken on by network engineers while learning the basics of Cisco Network Configuration.</li> </ul>   |
| Summer 2013 | Intern Analyst, <i>Deutsche Bank</i> <ul style="list-style-type: none"> <li>· Worked with a team of portfolio managers assisting with compiling and analyzing financial data</li> <li>· Crafted a Microsoft Access database for the loans team focused on competitor analysis</li> </ul> |

**Andrew Reynolds**

6 Rosewood Place, Westborough MA, 01581

Phone #

at31reyn@siena.edu

Education

**Siena College**, Loudonville, New York  
*Bachelor of Science, Computer Science*  
 Minor: Business

*Expected May 2015**Overall GPA: 3.56**GPA within CS Department: 3.81*

**Relevant Coursework completed by December 2014:** Java Programming, Analysis of Algorithms, Object Oriented Programming, Python Programming, Robotics, Data Structures, Programming in C, Web Application Development, Assembly Language, Calculus I/II, Discrete Mathematics I/II, Database Management Systems, Android App Development, and Software Engineering

**Work Experience**

**Software Engineer Intern**, GTNexus, New York City, NY

May 2014 – Aug 2014

- Developed hybrid mobile applications
- Built version control mapping software tools
- Exposed to upper management meetings & software collaboration techniques

**Robotics Assistant, Northeastern Region Information Center (NERIC)**

Jan 2014 – May 2014

**NYS Department of Education, BOCES**, Albany, NY

- Implemented educational modules using Aldebaran Robot
- Modules to be used in grade school STEM introduction coursework

**Computer Science Tutor**, Siena College, Loudonville, New York

Oct 2012 – May 2014

- Helped students with CS coursework by reinforcing course instructions

**Student Researcher**, Siena College, Loudonville, NY

Jun 2012 – Aug 2012

- Created text retrieval system in Java, utilizing UMLS and Lucene
- Worked with a team of four students and faculty
- Submitted results to the TREC 2012 Medical Track Sector

**Skills**

**Programming Languages:** Java, Python, Visual Basic, MIPS, XML, SQL, C, Bash Scripting

*Extensive experience in Java and Python*

**Algorithms:** Knowledge and understanding of common and complex computer science algorithms

**Robotics:** Ability to use ROS and knowledge of current robotic research field

**Web Applications:** Experience creating web applications with HTML5, CSS, JavaScript, and PHP

**Hybrid App Development:** Development using PhoneGap, Android SDK, and xCode

**Relevant Accomplishments**

**Public Source Code for App & Developer Tools**

May 2014 – Aug 2014

- Available at <https://github.com/atreynolds36>

**Presenter, Text Retrieval Conference (TREC)**, Baltimore, MD

Nov 2012

- Attended TREC sponsored by NIST and presented text-retrieval system research

**Author, Siena College Medical Information Retrieval System**

Sept 2012 – Nov 2012

- Co-wrote paper on design and effectiveness of TREC medical system

**Summer Research Symposium**

Nov 2012

- Presented research in front of faculty and students at Siena College

**2013 Siena College RoboShow**

Dec 2013

- Displayed robot programmed in Python through the use of ROS
- Created a video to showcase the research progression throughout semester

## Appendix B: Glossary of Terms

**CS-ACTIONS** – Computer Science Alumni Connection Through Interactive Open Networking System – This is the name and acronym for our system.

**Gantt** – a chart in which a series of horizontal lines shows the amount of work done or production completed in certain periods of time in relation to the amount planned for those periods.

**HTML** – HyperText Markup Language – language used to develop websites

**Java** - Object-oriented programming language developed by and maintained by the Oracle Corporation

**JavaScript** - Computer programming language used primarily in web browsers for based client-side scripts

**SQL** - Structured Query Language, language used to develop databases

**Waterfall Model** – a sequential design process, often used in software development processes, in which progress is seen as flowing steadily downwards.