

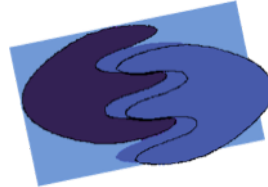
Software Plan

Subconscious Analysis Software (S.A.S.)

Requested by:

Dr. Eric Breimer
Professor
Department of Computer Science
Siena College

Delivered by:



Enigma Elucidation

Prepared By:

Lindsay Kulzer
Christopher Black
Megan DeRudder
Amanda Kurz
Nathan Levine
Daniel West

September 18, 2011
Version 1.0

S.A.S. SOFTWARE PLAN

PROBLEM DEFINITION.....	3
1.1 PROBLEM DEFINITION	3
1.2 SYSTEM JUSTIFICATION	3
1.3 GOALS FOR THE SYSTEM AND PROJECT	3
1.4 CONSTRAINTS	3
1.5 FUNCTIONS TO BE PROVIDED	4
1.6 USER CHARACTERISTICS	4
1.7 DEVELOPMENT/OPERATING/MAINTENANCE ENVIRONMENTS	4
1.8 SOLUTION STRATEGY	5
1.9 PRIORITIES OF THE SYSTEM FEATURES.....	5
1.10 SYSTEM ACCEPTANCE TEST	6
PROJECT PLAN	6
2.1 LIFE CYCLE MODEL	6
2.2 ORGANIZATIONAL STRUCTURE	7
2.3 DEVELOPMENTAL ENVIRONMENT	8
2.4 PRELIMINARY DEVELOPMENT SCHEDULE	9
2.5 PROJECT MONITORING AND CONTROL MECHANISMS	10
2.6 TOOLS AND TECHNIQUES	10
2.7 PROGRAMMING LANGUAGES	10
2.8 TESTING REQUIREMENTS	10
2.9 SUPPORTING DOCUMENTS	10
2.10 SOURCES OF INFORMATION	11
APPENDIX A: GLOSSARY OF TERMS	12
APPENDIX B: RESUMES.....	13

PROBLEM DEFINITION

1.1 PROBLEM DEFINITION

Client Dr. Eric Breimer, professor in the Computer Science Department at Siena College, would like an implementation of a psychology test known as an Implicit Association Test (IAT). A participant taking an IAT is asked to categorize an image or word as fast as possible. This test uses categories and stimuli to measure biases that the test-taker may have. Dr. Breimer wishes to use S.A.S. to create his own IATs, alter any of his IATs, and use the data from those IATs for research purposes. Dr. Breimer hopes to have web-based software in order to extend the reach of participants for the IATs.

1.2 SYSTEM JUSTIFICATION

IATs are very useful in the psychiatric field. Project Implicit, a research project at Harvard has created a number of IATs that can detect a person's bias toward race, gender, religion, age, weight etc. Although these are extremely useful, they are also the only IATs available. The purpose of this project is to create an authoring tool for IATs. Our team will work to create a website where Dr. Breimer can design his own IAT tests; choose names, choose categories, upload his own stimuli, and review his tests data after people have taken them.

1.3 GOALS FOR THE SYSTEM AND PROJECT

The goal of this project is to provide our client with a framework capable of constructing fully functional IAT's and allowing users to run them from the website. The client will be able to customize the IAT framework to fit his research needs. These IAT's will then be easily accessible to anyone on the web.

1.4 CONSTRAINTS

The only constraints at this time are that we cannot use flash and everything has to be web-based. The system must not have any runtime dependency on a localized server. This is subject to change depending upon the desires of our client.

1.5 FUNCTIONS TO BE PROVIDED

- Ability for the administrator to create tests by uploading stimuli objects from his or her computer and setting the appropriate association words with each object.
- Ability for administrator to recall previous tests
- Provide ways for the administrator to store and recall data of test taker
- Provide a secure transfer of results to the test administrator
- Ability to administer tests to users online

1.6 USER CHARACTERISTICS

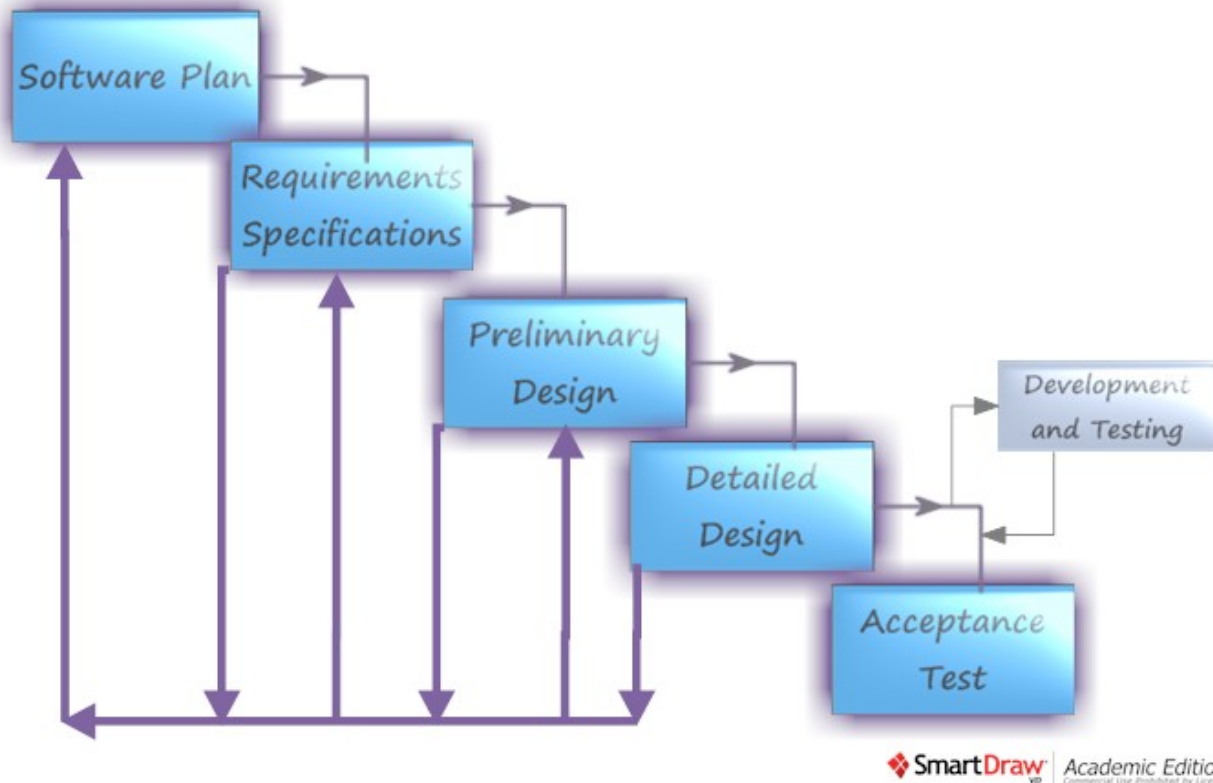
The primary user of this software system will be our client Dr. Breimer. He will have full access to creating new Implicit Association Tests with different stimuli he can upload and alter. Dr. Breimer will have full access to adding and altering IATs, as well as looking at data for the former IATs on the site. Anybody will be able to go on the site and take the tests. When on the website, the user will be able to choose a test, take a demographic survey and then take that IAT. Dr. Breimer wishes to use the data of his IATs for future research.

1.7 DEVELOPMENT/OPERATING/MAINTENANCE ENVIRONMENTS

The Implicit Association Test will be developed in the Software Engineering lab of Siena College, and team Enigma Elucidation's personal devices. Dr. Breimer will have access to the finished application and will then distribute it. Once the project is in deployment, maintenance will be done by Dr. Breimer.

1.8 SOLUTION STRATEGY

The Waterfall Model



We will be using the linear sequential, waterfall model to develop S.A.S. To progress in the development process we must first finish the previous step. Unlike the classic waterfall model, we have the ability to return to any of the previous steps at any stage in development. The additional development and testing step indicates we will develop and test our model many times before we can move into the acceptance test.

1.9 PRIORITIES OF THE SYSTEM FEATURES

The primary feature of our system will be to provide an easy to use authoring tool that will allow our client to quickly generate IATs with minimal user input. The system will take input images and text from the user, build an IAT, and upload it to a website for easy access. These IATs will be run within the website, completely independent of localized servers. Dr. Breimer would like to alter or update any IATs on the website. Ideally, the IAT's will have built in lie detection to protect the integrity of the tests; however, this is low priority.

1.10 SYSTEM ACCEPTANCE TEST

In order for S.A.S. to be an acceptable project, it must contain the following features:

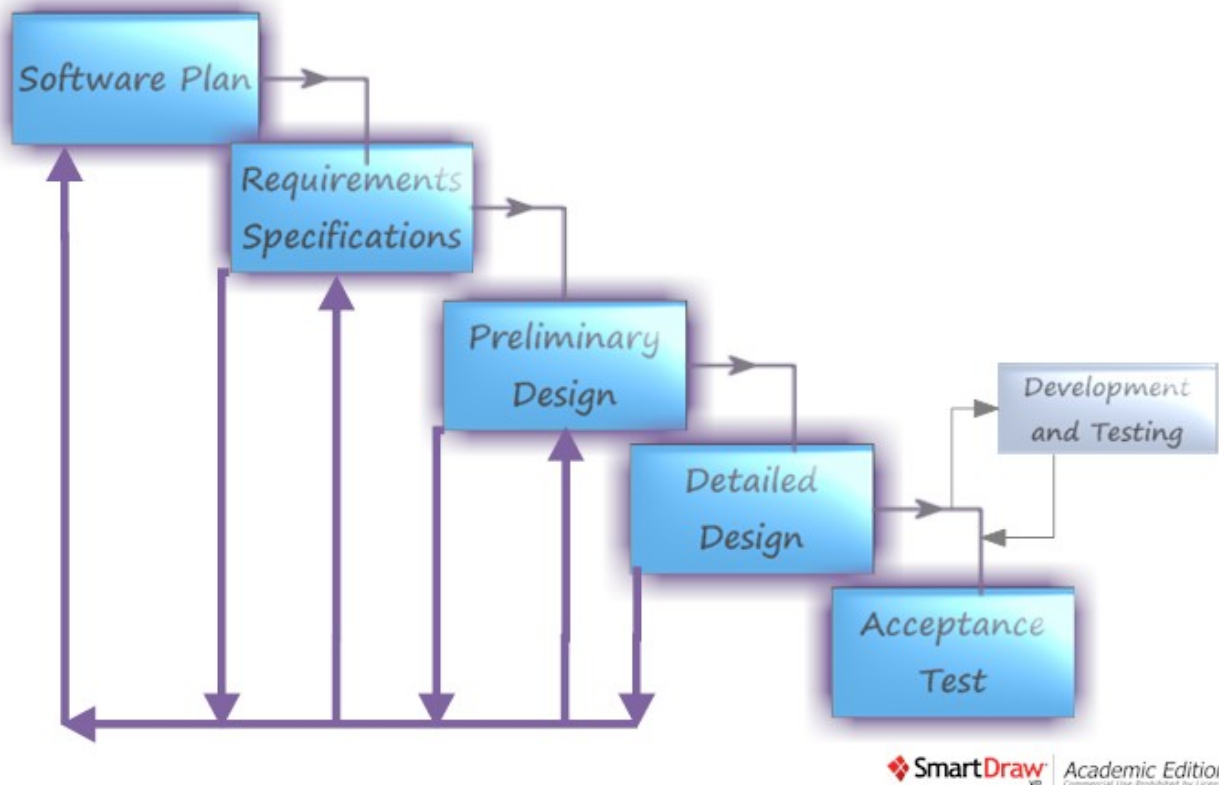
- A authoring tool that allows Dr. Breimer full access to creating and altering specific IATs easily
- A website containing all of Dr. Breimer's IATs and that allows all viewers access to taking those IATs
- A database that will contain records of IATs taken and their results.
- An algorithm that assigns point values to answers.
- After completion of a IAT, users will be informed of any bias that they may have based on test results.

Note: More features may be added during development.

PROJECT PLAN

2.1 LIFE CYCLE MODEL

Enigma Elucidation's software development will follow a Waterfall Model combined with spiral methods.



These are the following documents to be presented.

Software Plan: Clearly defines the problem and goals necessary for a satisfactory solution.

Requirements Specifications: Develops a clearer understanding of the problem by addressing the specific requirements the client desires in a solution.

Preliminary Design: A feasible outline of the software goals and requirements in the previous documents.

Detailed Design: An implementation of the preliminary design is completed and prepared for testing.

Development and Testing: Implementation is tested. Product is redesigned and retested until it exceeds Enigma Elucidation's high quality expectations.

Acceptance Test: The final software product is presented to the client so that he can do testing to make sure his wants and needs have been met.

2.2 ORGANIZATIONAL STRUCTURE

Enigma Elucidation consists of the following members:

<u>Name</u>	<u>Email</u>	<u>Phone Number</u>
Black, Christopher	cr28blac@siena.edu	(845) 313-1516
DeRudder, Megan	mc29deru@siena.edu	(631) 365-4337
Kulzer, Lindsay	lm15kulz@siena.edu	(518) 469-4891
Kurz, Amanda	ae04kurz@siena.edu	(315) 882-2658
Levine, Nathan	nd10levi@siena.edu	(518) 727-0248
West, Daniel	dj11west@siena.edu	(518) 867-5271

Enigma Elucidation is organized in the following manner:

Kulzer, Lindsay	Team Leader Organizes client and team meetings, manages team and ensures that the product meets the client's needs.
Black, Christopher	Database Administrator Develops a database System for Software. Helps maintain the team website.
DeRudder, Megan	Web Developer Serves as primary developer of internet based features of product. Develops and maintains the team website.
Kurz, Amanda	Documentarian Organizes and maintains all team documents. Makes documents easily accessible to the team and the client.

Levine, Nathan

Lead Program Engineer

Serves as primary designer of program. Assists other team members with their duties.

West, Daniel

Systems Administrator

Maintains the computer resources and software. Helps maintain the database System.

Although these are the primary duties of each position, each member of this team is flexible. Enigma Elucidation realizes the importance of teamwork and therefore each member is willing to assist his or her teammates when necessary. All project decisions will be voted on by the team. In the event that there is a tie, the team leader will make the final decision.

2.3 DEVELOPMENTAL ENVIRONMENT

Enigma Elucidation's development environments are as follows:

Server:

Operating System: CentOS (Linux) Release 5.2 (Final)
Server Name: oraserv.cs.siena.edu
CPU Type: Intel Xeon x86_64 2.66 GHz
Memory: 8 GB

Macintosh Computer:

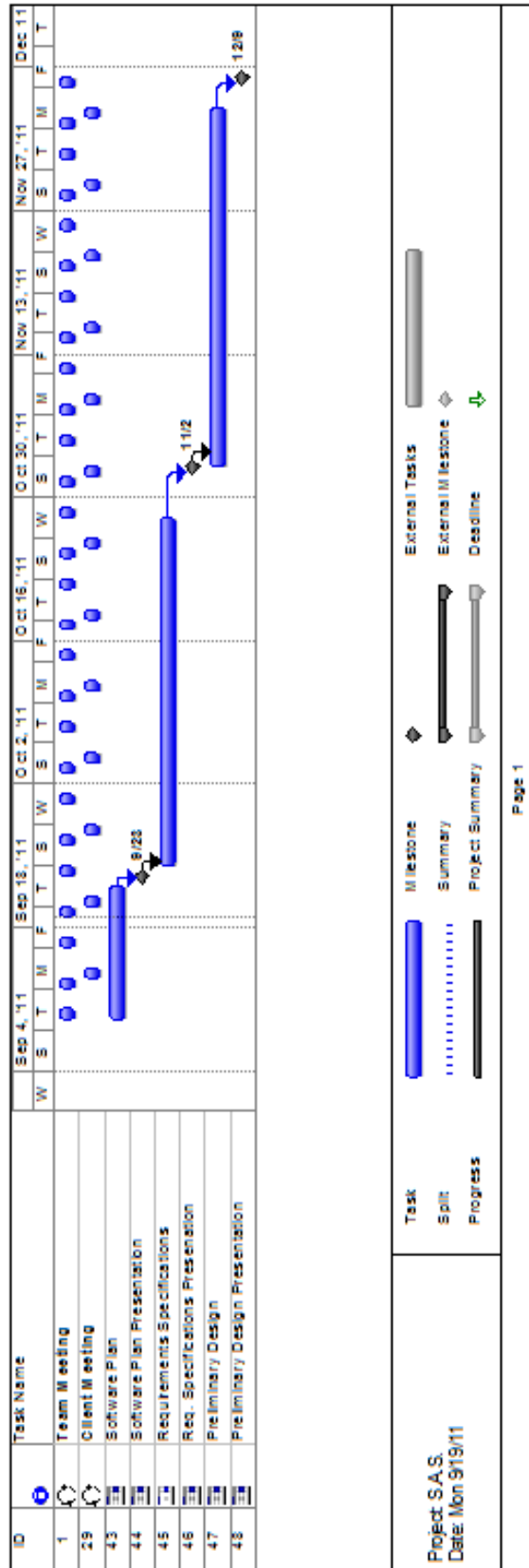
Operating System: Mac OS X 10.6.4
Model: iMac 5,1
Processor: Intel Core 2 Duo
Speed: 2 GHz
Memory: 1 GB

Windows Computer:

Operating System: Windows Vista Enterprise (6.0, Build 6002); Service Pack 2
Model: Dell OptiPlex 760
Processor: Intel Core 2 Duo
Speed: 2.93 GHz
Memory: 4 GB

Note: These versions are not exact and subject to change with software updates.

2.4 PRELIMINARY DEVELOPMENT SCHEDULE



2.5 PROJECT MONITORING AND CONTROL MECHANISMS

In order to keep open communication with both Enigma Elucidation and Dr. Breimer, we will be in constant email communication. Also, we will be having at least two team meetings every week to ensure that the team is up-to-date with the each member's individual progress, as well as the project's progression as a whole. We will also meet with our client a minimum of once a week in order to keep him up-to-date with our progress, to ensure we are headed in the right direction, and to ask any specific questions we may have about his project ideas.

2.6 TOOLS AND TECHNIQUES

For this project we will be using our knowledge of previous courses and experiences, as well as:

- Dreamweaver
- Microsoft Office 2007 Suite
- Firefox
- Internet Explorer
- Google Chrome
- Safari

This list may be subject to change depending on our client's desires and/or new developments

2.7 PROGRAMMING LANGUAGES

S.A.S. will be created using the following languages: PHP, (X)HTML, CSS, MySQL, and JavaScript.

This list may be subject to change depending on our client's desires and/or new developments.

2.8 TESTING REQUIREMENTS

Testing for this Implicit Association Test will be conducted frequently throughout the development of this software by team Enigma Elucidation. Testing will help ensure quality software that is platform independent. All results of testing will be documented and posted on our team website. This way our client can still view our data to ensure proper development without actually being present.

2.9 SUPPORTING DOCUMENTS

Enigma Elucidation will complete the following supporting documents throughout the software development process of S.A.S. The documents will be delivered and presented to Dr. Breimer on the following days:

Document Name	Delivery Date	Presentation Date
The Software Plan	September 22, 2011	September 23, 2011
Requirements Specification	October 28, 2011	October 31, 2011
Preliminary Design	December 6, 2011	December 7, 2011
Detailed Design	February 2012	February 2012
Acceptance Test	April 2012	April 2012

These documents will also be accessible via the Enigma Elucidation team website.

2.10 SOURCES OF INFORMATION

The information used in this document has been taken from our client meetings with Dr. Breimer, Dr. Lederman, Software Engineering Lectures, previous Software Engineering projects, Zachary Fitzsimmons (Dr. Breimer's student researcher) and Harvard's Project Implicit website.

APPENDIX A: GLOSSARY OF TERMS

CSS (Cascading Style Sheets) - A style sheet language used to style webpages written in HTML and XHTML

Chrome - Web browser designed by Google

Constraint - client specifies specific characteristics about the project that the software team **must** take care of to have an acceptable project

Database - An organized collection of data for one or more uses, typically in digital form

Dreamweaver- A web development application produced by Adobe

Firefox - Internet browser designed by Mozilla

Gantt Chart - Gantt charts illustrate a project schedule specifying the start and finish dates of the terminal elements and summary elements of a project

HTML (Hyper Text Markup Language) - language for creating web pages

Internet Explorer (IE)- Internet browser designed by Microsoft

JavaScript - language that operates on the user's computer rather than on the hosting server

Microsoft Office Suite - applications including Microsoft Office, PowerPoint, Excel, etc

MySQL - A relational database management system

PHP (PHP Hypertext Preprocessor) – server side HTML scripting language

Subconscious Analysis Software(S.A.S.) – The IAT authoring tool Enigma Elucidation plans to design.

Spiral Model - software development design in which you can return to a previous step after you've already moving to the next step

Waterfall Model - a linear sequential software development design that has steps to success, in which you can't move on to the next task until the previous one is completed

XHTML (eXtensible Hypertext Markup Language) - a language that web pages are written

APPENDIX B: RESUMES

Kulzer, Lindsay.....	14
Black, Christopher.....	15
DeRudder, Megan.....	16
Kurz, Amanda.....	17
Levine, Nathan.....	18
West, Dan.....	19

LINDSAY M. KULZER

47A Austerlitz Street Chatham, NY 12037
(518) 469 - 4891 – lindsaykulzer@gmail.com

OBJECTIVE

To obtain a professional position that will utilize and further develop both my mathematical and technical skills.

EDUCATION

Siena College Loudonville, NY • B.S. in Mathematics and Computer Science – Expected Graduation: May 2012
Cumulative GPA: 3.75/4.00 Math GPA: 3.77/4.00 CS GPA: 3.78/4.00

• **Selected Coursework**

Computer Science Data Structures, Object Oriented Programming, Bioinformatics, Assembly Language and Computer Architecture, Database Management, Analysis of Algorithms, Theory of Computation

TECHNICAL SKILLS

- Proficiency in software development in Java, Database Design, SQL, Visual Basic, L^AT_EX
- Familiarity with HTML, CSS, UML, C, UNIX, GNU/Linux, Mac, and Windows Systems

WORK EXPERIENCE

Software Engineering – Siena College – Loudonville, NY September 2011 – Present
Team Leader · Elected by Faculty and Peers

Computer Science Department – Siena College – Loudonville, NY Fall 2009 – Present
Office Assistant

- Ran copies and sent e-mails for the Department
- Updated Bulletin Boards, Beautified Department with Computer Science Decor
- Became Familiar with the Faculty and School of Science

Tutoring Center – Siena College – Loudonville, NY September 2011 – Present
Calculus Tutor

- Helped students taking Calculus II, Calculus I and Pre-Calculus courses better learn the subject
- Worked with groups and individual students

UNDERGRADUATE RESEARCH

Analytical Number Theory September 2011-Present
Dr. Nikolai Krylov

- Explored the field of analytic number theory

Summer Scholars Research Summer 2011
Dr. Nikolai Krylov

- Researched the Group Structure of PAPTs (Primitive Almost Pythagorean Triples)
- Used several fields of Mathematics to help expand our research

Representation of Women in Computer Science Films Fall 2010
Dr. MaryAnne Egan & Dr. Darren Lim

- Expanded on previous work by Undergraduate Researchers
- Collaborated with two professors in a research environment
- Presented as *Computer Science and Gender Perceptions in Film* at NYCWiC 2011 in Albany, NY

ACTIVITIES

- ACM-W (Association from Computing Machinery for Women) Siena Chapter
President Fall 2011-Present
Communications Representative Fall 2009-Spring 2010
- Volunteered at the 4th and 5th annual IMPACT Program at Siena College 2010
- Volunteered as a 'Hopper' at the Grace Hopper Celebration of Women in Computing Conference 2009 & 2011
- Participated in the ACM Programming Contests at Western New England College 2010
- Judged the 23rd annual High School Computer Programming Contest – Siena College 2010
- Ran in the Mohawk Hudson River Half Marathon 2010
- Ran in the 31st Annual Freihofer's Run for Women 2009
- Volunteered and ran in Sean's Run in Chatham, NY 2005-2009

AWARDS

- Recipient of Clare Booth Luce Scholarship for Women in Sciences Awarded in 2010
- Member of Pi Mu Epsilon Mathematics Honor Society Inducted in 2011
- Member of Upsilon Pi Epsilon Computer Science Honor Society Inducted in 2011
- President's List Spring 2011 & Fall 2010
- Dean's List Spring 2010, Fall 2009, Spring 2009 & Fall 2008

Christopher Black

Permanent Address

188 Big Island Rd.
Warwick, NY.10990

Contact: (845)651-9758
Email: cr28blac@2siena.edu

Objective

To secure a position in the Computer Science field that will allow me to apply and expand my current knowledge in the field.

Work Experience

- Meat Clerk/ Maintenance Price Chopper, Warwick NY (2009-present)
 - Worked in the meat department waiting on customers and doing quality assurance
 - Did regular maintenance throughout the store helping both customers and other employees solving problems and maintaining equipment

Academics

- Siena College (2008-present)
 - Computer Science Major
 - GPA: 2.48/4.0 overall 2.76/4.0 computer science
 - Anticipate graduating in May of 2012

Computer Skills

- proficient in Java, C, VBA, CSS, (X)HTML, and PHP programming
- Microsoft Word, Excel, PowerPoint, Access, Dreamweaver, BlueJ, Oracle

Relevant Course Work

- Intro to Programming, Assembly Language, Software Engineering, Analysis of Algorithms, Web Design, Robotics, Calculus 1, Calculus 2, Discrete Mathematics 1, Discrete Mathematics 2

Related Experience

- Software Engineering Team – Database Administrator

Megan DeRudder

School Address
SPOB 3828
515 Loudon Rd.
Loudonville, NY 12211

megder90@gmail.com
631 – 365 – 4337

Home Address
26 Riverside Street
Amityville, New York 11701

EDUCATION

B.S. Mathematics, Computer Science, Excepted Graduation May 2012
Siena College, Loudonville NY 12211

GPA: 3.35 Computer Science: 3.55 Math: 3.32

Achievements:

Presidential Scholar: Fall 2008- Present

William and Delia Harvey Scholarship: Fall 2010- Present

Dean's List: Fall 2009, Fall 2010

Residence Hall Association Member of the Year 2010- 2011

"Fill Her Shoes" Woman's Leadership Conference Nominee: Spring 2011, Fall 2010

COMPUTER SKILLS

Proficiency in: Java, SQL, HTML, PHP, CSS, Microsoft Office 2007

Familiar with C, Visual Basic, and MATLAB, Microsoft, Apple and LINUX Operating Systems

RELEVANT EXPERIENCE

Lead Web Developer, Software Engineering I, Siena College Present

- Build and maintain team's website

Independent Study, Siena College Present

- Research Multi-Robot Algorithms for Collective Construction System

Center for Initiatives in Pre-College Education, Rensselaer Polytechnic Institute Spring 2011 - Present

- Develop and lead lessons in Lego Robotics, Scratch, easy C programming for RPI Academies
- Educate and work with K-12 teachers and students on improving classroom technology

Lead Mentor, Urban Scholars Program, Siena College Fall 2009 – Present

- Develop and lead programming lessons for Lego Robotics
- Assess the student's development for educational research

Executive Office Assistant, Above Board Real Estate Spring 2005- Summer 2010

- Maintained businesses webpage and advertisements on various realtor websites
- Scheduled Broker and Agent's appointments and completed miscellaneous office task

CAMPUS AND COMMUNITY ACTIVITY

Residence Hall Association, *Executive V.P. of Programming* Spring 2011- Present

Association for Computing Machinery- Women (ACM-W) Fall 2010- Present

Relay For Life, *Team Development Chair*: Fall 2010 – Present

Siena College S.A.I.N.T.S., Student Orientation Leader Summer 2011

Residence Hall Association, *Executive V.P. of Programming Assistant* Fall 2010

Siena College Admissions, *Student Ambassador* Fall 2009 – Fall 2010

Amanda Kurz

278 Manning Blvd, Apt 1, Albany, NY 12206
ae04kurz@siena.edu (315) 882-2658

Objective To further improve my knowledge of Computer Science and to afford the opportunity to be challenged by new experiences

Education

Siena College

Bachelor of Science in Computer Science, May 2012

Minor in Business

GPA: 3.63/4.0 (major), 3.30/4.0 (overall)

Computer Skills

Languages: Java, HTML

Operating Systems: Windows 98, XP, Vista, 7, OSX Tiger, Snow Leopard, Lion

Database Systems: Oracle, SQL

Applications: MS Word, Excel, Access, Outlook, Power Point, Blackboard,
Adobe Fireworks

Relevant Experience

Siena College Information Technology Services Student Leader, Loudonville, NY

EEC (Electronically Enhanced Classroom) Supervisor, September 2011

- Providing on site EEC support
- Performing periodic maintenance on EEC equipment

Tier 1 Helpdesk Support, May 2011

- Assisting members of the Siena College community with password resets and reactivation
- Performing virus/software removal and installation, email set up and assisting with any questions the user may have

Student Consultant, January 2011

- Offer on site support for students in computer labs
- Ensuring that the printers and computers are functioning correctly in labs

Relevant Coursework

Intro to Computer Applications, Intro to Programming, Database Design, Management Info Systems, Multimedia Development, Discrete Structures I and II, Data Structures, Communications and Networks, Assembly Language (current), Database Management (current), Software Engineering I (current)

Activities Community Service, Open Mic Nights and Talent Show participation at Siena College

Honors Dean's List, *Fall 2009 and Fall 2010*
Upsilon Pi Epsilon, *International Computer Science Honors Society, April 2011*

Nathan Levine
3 Heather Lane, Ballston Lake, NY, 12019
nd10levi@siena.edu
518-727-0248

Objective

An entry-level position writing and modifying computer programs to solve technical problems.

Education

Siena College, Loudonville, NY

BS Physics and Computer Science (Double Major), Minor in Math

(5/2012)

GPA: 3.37

Experience

Computer Science Research, Siena College, Loudonville, NY, Summer 2011- Present

- Creating an image recognition computer program utilizing original algorithms and techniques.
- Intended to support recognition of desired features from photographic data.

Physics Research, Siena College, Summers 2010 and 2011

- Set up a neural network to classify spectral data by planet type.
- Wrote a computer program to simulate, process and convert satellite data to a network compatible format.
- Taught network to recognize signal patterns using the computer program output.
- Obtained data classification accuracy of 95% with twenty-two different signals containing noise.
- Anticipate program being used in the future on a satellite to classify the capability of planets to support life.
- Anticipate co-authoring a published paper with Dr. Ted von Hippel, expected publication 2012.

Physics Research, Siena College, Summer 2009

- Wrote computer programs to analyze data for MKW10 galaxy cluster.

Resident Assistant, Siena College, Loudonville, NY, Summer 2009

- Resource for students; intermediary between students and Office of Residence Life

Lab Technician Assistant, Siena College, Loudonville, NY, Spring and Summer 2009

- Modified and tested labs for introductory physics classes.
- Devised and implemented a more efficient system for organizing laboratory equipment.

Relevant Classes Taken

Java, Data Structures, Object Oriented Programming, Database Management, Software Engineering, Assembly Language, Networks and Communications, Artificial Intelligence, Discrete Mathematics, Computational Physics, Modern Physics, Quantum Mechanics, Electricity and Magnetism, Electronics, Mechanics, Applied Mathematics

Programming Languages

Proficient in Java, MATLAB, Mathematica, Visual Basic.

Daniel West

8 St. Stephens Lane East Scotia, NY 12302 Phone: 518-867-5271 Email:d-west@hvcc.edu

Objective:

To obtain employment in the field of Computer Science.

Education:

Siena

Bachelor of Science in Computer Science

GPA: 3.16

Expected graduation January 2013

Hudson Valley Community College

Associate in Science in Computer Information Systems

Presidents list

Deans list

GPA: 3.4

Graduated in January 2011

Spring 2009 and Spring 2010

Fall 2008 and Fall 2010

Work Experience:

Dunkin' Donuts, Glenville, New York

Crew Member

Shift leader

- Operate store during days of the managers' absence
- Communicate with customers and co-workers
- Resolve problems that occur during a shift

Part Owner K and D Computer Solutions

- Experience starting a business
- System building and repair

July 2007-November 2008

November 2008 – Present

August 2009 – Present

Internship

ME Engineering Albany, New York

- Learn about the required task of the Engineer
- Attend planning meetings for future projects

Fall 2007

Community Service:

- Served dinner at City Mission of Schenectady with Immaculate Conception Church

2007

- Gift wrapped presents at City Mission of Schenectady with Immaculate Conception Church

2007

- President of High School Student Government

2006-2007

Skills/Interest:

Skilled in C++ and Java programming languages

Skilled in Microsoft office, Visio, and Project

Familiar with PHP, Dreamweaver, and Photoshop

Brewing beer, Cooking, Car audio, Computer hardware, Camping, Hiking