Ames Bielenberg

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Education

Swarthmore College, Swarthmore, PA
> Bachelor of Science degree in Engineering, June 2013.

Relevant Coursework: Mobile Robotics, Artificial Intelligence, Embedded Systems, Electronic Circuit Applications, Electrical Circuit Analysis, Linear Physical Systems Analysis, Fundamentals of Digital Systems, Experimentation for Engineering Design, Mechanics, Computer Graphics, Bioinformatics, Data Structures and Algorithms.

Research Experience

Massive Online Social Networks NSF REU, Suffolk University, *Boston, MA*   Summer 2011
> Studied the architecture and growth of Diaspora, an open-sourced decentralized online social network.
> Build and operated a persistent crawler that collected data on the growth of the many Diaspora servers.
> Designed web applications to view and analyze the collected data.

Web-based Simulations of Linear Physical Systems, Swarthmore Engineering Dept., *Swarthmore, PA*   Summer 2010
> Created a tool that enables educators to insert several types of dynamic figures into web pages.
> Leveraged the Raphaël Javascript library to create aesthetically pleasing diagrams and plots.
> Implemented a real-time numerical simulator for linear systems to drive the figures.

Web-based Browser for Educational Topic Maps, Swarthmore Engineering Dept., *Swarthmore, PA*   Summer 2009
> Built a visual interface to the XML Topic Map structure, allowing students to intuitively grasp the curriculum structure.

Publications

The growth of Diaspora-A decentralized online social network in the wild, A Bielenberg et al., IEEE INFOCOM Workshops, 2012.

Web-based Scripts for Animating System Simulations, A Bielenberg, EA Cheever, Computers in Education Journal, Vol XXI, No. 3, 2011.

Topic Maps Used to Present Interrelationships in Dynamic Linear Systems, EA Cheever, A Bielenberg, ASEE Annual Conference Proceedings, 2011.

Work Experience

Mobile Developer, Serendip Ventures, *Philadelphia, PA*   2014
> Created the iPhone app and contributed to the Rails server and Ember web app for a social music startup.

Engineering Intern, Scopely, *Los Angeles, CA*   Summer, Fall 2012
> Improved and maintained a high-traffic Facebook game, implemented a mobile website and various web
> automation tools, created several data aggregation and analysis platforms, and built an SMS-controlled garage opener.

Engineering Assistant, Messersmith Wood Chip Combustion Systems, *New England*   Summer 2009
> Shadowed an Engineer on service trips to boiler plants in Vermont and Maine.

"Multiple-Use" Water Services, Winrock International, *West Africa*   Summer 2007
> Worked with an NGO in Zinder, Niger, installing water pumps and designing drilling machinery.

Independent Engineering Projects

Wireless Vehicle Booking and Tracking System (Python, Node.js, Raspberry Pi, Arduino, GPS, GSM)
> A carsharing and fleet management system, developed as an Engineering Senior Design project (E90).

Facebook Network Visualizer (Javascript, WebGL, Facebook API)
> Displays facebook friends as a linked network in 3D space. Groups heavily-linked friends to reveal social structure.

3D Interface Device (Arduino, Processing)
> A set of input arms for manipulating objects in a virtual 3D physics simulation.

Practical Experience and Skills

Programming: Objective-C/iOS, Python/Django, Javascript/Node.js, HTML+CSS, Ruby/Rails, PHP, Java/Processing, MATLAB, C++, C

Software: Configuring Linux servers, using Photoshop, Illustrator, Blender, Multiframe

Electrical: Prototyping circuit boards with Eagle, programming microcontrollers (TI MSP430 and Atmel), using test equipment

Mechanical: Fabrication in wood, metal, paper and other materials