Matt Ball

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yosemitebandit.com/projects | github.com/yosemitebandit

Interests: data access and visualization, customer development, iteratively building products that are exciting to use

Preferred tools: Python, Javascript, MongoDB, Redis, Linux

Other skills: HTML, CSS, server management, PHP, MATLAB, embedded electronics, carpentry, welding, beginner-level Spanish

Education

Duke University, Civil and Environmental Engineering, BSE   Sept 2006 - May 2010

Work Experience

ICT Program Associate at the Aquaya Institute   Feb 2012 - Feb 2013

   Conducted pilot projects, needs assessments and client interviews in Cambodia, Vietnam and Mozambique

   Worked with clients to develop a custom web application for data management and analysis; deployed at pipelinehq.org

   Developed a prototype for simple mobile data collection based on conversations with a client; deployed at ivrhub.org

   Delivered two presentations on ICT applications at the 2012 UNC Conference on Water and Health

   Worked remotely with leads in Ecuador, Uruguay, Morocco and India to construct proposals and scope-of-work documents

   Helped to shape and implement a business strategy for ICT consultation and software development

Applications Engineer at Redwood Systems   Oct 2010 - Nov 2011

   Worked with key customers to develop a web dashboard that displays sensor data and energy efficiency reports

   Provided technical support for customers and field teams

   Built and deployed a RESTful API for accessing occupancy and power consumption data

   Created a statistical analysis library for conducting case studies and other research

   Created data visualizations showing occupancy overlaid on a building's floorplan

   Developed and deployed software to let customers control lights using their mobile phones

   Created documentation and videos describing the company's products and software

Teaching Assistant for Duke's Dept. of Biomedical Engineering   Aug 2009 - May 2010

   Assisted in client-focused product design for the senior capstone course *Devices for People with Disabilities*

Imaging Analyst for the Reichert Lab in Duke's Dept. of Biomedical Engineering   Nov 2007 - Sept 2008

   Performed imaging and analysis of nervous tissue using MATLAB

Lab Document Writer for Engineering World Health   Sept 2006 - Feb 2007

   Independently prepared training documents for an electronics course

Projects

Engineers Without Borders   Sept 2006 - May 2009

   Researched biomass charcoal, jatropha-based biofuels, and rainwater harvesting in Nkokonjeru, Uganda

   Surveyed potential bridge sites in the Obrajes Valley, Bolivia

   Led the design and construction of a 2900 gallon rainwater harvesting tank in Kasaka, Uganda

   Organized several talks on international development with local experts and other thought-leaders

Engineering World Health   Sept 2006 - May 2009

   Organized the construction of 70 ECG calibration devices for distribution to Central American hospitals

   Led research team in the development of a portable refrigeration unit for transporting biological samples in rural areas

Perkinsense   Nov 2009 - May 2010

   Project lead in the development of a room-occupancy detection system

   Designed and built 16 WiFi-enabled sensor nodes for study rooms in Duke's Perkins Library

   Created server backend and web frontend for students to find available study rooms

DuTrack   Nov 2009 - May 2010

   Project lead in a low-cost bus-tracking sensor system for the Duke University campus

   Utilized the OpenGTS Java project and created modifications for the apps on the mobile phone-based trackers

   Led team in creation of PHP backend, administrative interface, and frontend with Google Maps

Volunteering

CollegeTrack   Sept 2012 - present

   Assisted high schoolers in science, math and the occasional humanities topic twice a week