Luke Plewa

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EXPERIENCE

Verdigris Technologies Mountain View, California June 2012 - September 2014
Software Engineer Intern

Working as part of a start up has given me a broad range of skills. I have worked on all aspects of the product (Building.AI) including firmware, full-stack web development, databases, and machine learning. Specific projects include an energy consumption prediction algorithm for HVAC devices based on weather data, porting the frontend to Ember.JS, and data visualization through D3.JS and Google Charts. I had a rich experience helping the team grow from 4 individuals to over fifteen. This allowed me to practice strong communication between CEO, marketing, and customer experts. It also allowed me to work on long term projects both individually and through paired programming. My longtime experience with Verdigris allowed me greater understanding with company and startup culture.

Specific technologies I gained professional experience with include Ruby on Rails, Python, Django, Javascript, Ember.JS, JQuery, Redis, MongoDB, Rspec, and PostgresQL. I also gained experience using organizational tools such as Trello (for workflow management), Objectives and Key Results (self improvement), Scrum development, biweekly sprints, and daily stand-ups.

EDUCATION

California Polytechnic San Luis Obispo San Luis Obispo, California June 2015
Bachelor's of Science and Master's of Science in Computer Science, Major GPA 3.6
Dean's List (GPA over 3.5) across multiple quarters

Master's Thesis
My culminating experience to my master's degree was shaped in the form of a thesis. My thesis focused on the prediction of sudden cardiac arrest using heart rates derived from wearable devices. I collected a database of 300+ heart rates (much larger than existing, public solutions), which were evenly divided between healthy, in-hospital heart rates, healthy, out-of-hospital heart rates, and non-healthy heart rates (five minutes before sudden cardiac arrest). Using a non-heterogenous meta classifier, I was able to achieve 96.36% classification accuracy with a F-score of 0.938 on only two minute samples of heart rate data.

SKILLS

- **DISCIPLINES:** Machine Learning, Full-stack web development, Graphics, Mobile, Video Games
- **LANGUAGES:** Python, Ruby on Rails, Dalvik (Android), Swift (iOS), Django, Javascript, Java, C++, C, PostgresQL, Redis, MongoDB, OpenGL
- **TOOLS:** Git, SVN, Autodesk Maya, Latex, Adobe Photoshop, Moqups, RSpec, JUnit

PROJECTS

- **MACHINE LEARNING:**
  - Energy Consumption Predictor for HVAC Devices
  - Sudden Cardiac Arrest Prediction through HRV
  - NLP Naming Conventions for Self-Describing Code
  - Stress-level Classification through HRV and GSR
- **ANDROID:**
  - Lava Knight: an OpenGL endless side-scrolling game
  - Shape Recognition Implementation for Papyrus
  - SkyNEST: Preferences learning application for NEST system based on schedule
- **iOS:**
  - Heart Rate and GSR collection application for use with Microsoft Band
  - SceneKit game modeled after Candy Crush Saga
- **GRAPHICS:**
  - Level-of-Detail Mesh Simplification Algorithm for Video Games
  - Data Visualization of HRV Features using Parallel-Coordinates

- **VIDEO GAMES:**
  TCX: Networked, territory-control game with OpenGL and C++
  Hoth: OpenGL and C++ spacecraft shooter demonstrating mesh deconstruction
  Beardo: Enchant.JS game built for tablets and mobile
  Video game blog featuring my thoughts on current events

INTERESTS

I am a big time gamer. I started with the Nintendo Entertainment System with Super Mario Bros. and never looked back. Since then, I've been a die-hard time fan of game franchises and companies such as Blizzard Entertainment, League of Legends, Pokemon, Legend of Zelda, Super Mario, and Halo.

I also embrace nerd culture through my love of universes such as Star Wars (being named Luke, how could I not?), Game of Thrones, Marvel, and DC Comics.

In my spare time I am also running, golfing, or cheering on Bay Area sports teams.

WEBSITE PORTFOLIO:

For specific details see my portfolio at: http://luke-plewa.github.io/