Klyde Breitton

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PROFESSIONAL EXPERIENCE

Honeywell **Fort Washington, PA**
Software Engineer *June 2016 – Present*

- Contributed networking and API features, including using IPC and multithreading, in C/C++ to the core platform of an embedded Linux safety controller
- Refactored and developed the infrastructure for a software implementation of FPGA-based controller memory tracking
- Debugged, profiled, and optimized C++ (MFC) software, improving chart loading by up to 20% and file checkouts by 6x
- Developed UI features in C# for a WPF Windows application
- Apply modern software engineering practices in a scrum team, using design patterns, unit and integration testing, and version control

Transcriptic **Menlo Park, CA**
Member of Technical Staff Intern *July 2015 – August 2015*

- Wrote a Python script controlling a Linux-based robotic arm to streamline manual waypoint training
- Identified key mechanical concerns in robotic arm waypoint training unreliability and designed 3D-printed and machined parts in SolidWorks to reduce errors to within 0.2mm accuracy
- Maintained version control with software using Git and with mechanical designs using TortoiseSVN

Translational Neural Engineering Laboratory **Lausanne, Switzerland**
Research Assistant *June 2014 – August 2014*

- Analyzed EMG and motion capture data in MATLAB for robotic rehabilitation research, including applying non-negative matrix factorization on datasets and implementing a joint center linear-algebra-based estimation algorithm

SELECTED PROJECTS

GIF Animation-based Wall Lighting *Fall 2015*

- Wrote a C++ library to display and transform (based on a gesture sensor) GIFs on a wall of LED panels driven by a Raspberry Pi B+ and OpenCV
- Created a basic webapp using Meteor.JS to remotely control LED panels
- Created a pixel manipulation algorithm to allow reconfigurability of panels in any rectangular pattern

Face Detection and Replacement *Fall 2014*

- Programmed a face detector in MATLAB using a self-written Histogram of Gradients (HOG) method to generate features used in an SVM classifier trained on 6000+ images of faces and 170,000+ not-faces
- Used a self-written Thin Plate Spline transformation method to morph replaced faces for seamless blending

EDUCATION

University of Pennsylvania **Philadelphia, PA**
Master of Science in Engineering in Robotics, Summa Cum Laude *September 2013 – May 2016*
Bachelor of Science in Engineering in Bioengineering, Magna Cum Laude *September 2011 – May 2016*

- Minors: Mechanical Engineering and Applied Mechanics, Comparative Literature and Literary Theory
- Honors: Tau Beta Pi Engineering Honor Society; Dean's List 2012-2013, 2014-2015, and 2015-2016