Clayton Salinger Ketner

Mechanical Engineering & Computer Science

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INTRODUCTION

Mechanical Engineer and software developer with strong practical experience, close attention to detail, and an interest in robotics, design, and fabrication. Highly organized, friendly, and eager to learn new technologies.

TIMELINE

June 2014 – Present (2 years)

Counsyl – *Automation Service Engineer*

- Primary mechanical design engineer - designed new automation hardware
  - Mechanical parts and assemblies in SolidWorks - DFM, DFA
  - Small mechanical parts, framing assemblies, large room planning assemblies
- Wrote and maintained software - full stack
  - Front and back-end development - Python and Django
  - Platform - Linux and Windows VM management via Puppet
- Developed PLC software and HMI design
- Performed error recovery and troubleshooting on high-uptime production robotics systems
- Investigated production hardware and software issues to identify root cause, provide fixes

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2009 – 2014

Graduated from University of Southern California (USC) – *(extra year due to transfer)*

- **B.S.**: Mechanical Engineering
  - CAD (adv. modeling and FEA), adv. strength of materials, linear control systems, heat transfer
- **Minor**: Computer Science
  - Robotics algorithms, artificial intelligence

Summer 2013 (4 months)

San Bruno Pet Hospital – *System Administrator*

- Independently maintained and installed computer systems.
- Communicated with employees and external tech support to report and resolve technical issues.
- **Received praise for improving reliability of hardware and software.**

Summer 2011 (3 months)

OSIsoft – *Virtual Campus Intern*

- Independently researched & integrated OSIsoft PI System with SAS analytics software.
- Concluded findings in a White Paper posted to OSIsoft's vCampus website.
- **Received praise from an outside company for quality of the White Paper.**

SKILLS

My Favorite Tools

Mechanical – SolidWorks
Hardware Prototyping – my Makergear M2 3D printer, 80/20 framing, mill, lathe, etc.
Programming – VIM, tmux, Python, Django
Software Prototyping – Arduino, Teensy, Raspberry Pi

Mechanical Engineering

CAD – SolidWorks, Pro-E, Solid Edge, PDM
Design – design for assembly and manufacture (DFA, DFM), stress, strain, vibration simulation (FEA),
Disciplines – control systems, MATLAB & Simulink, LabVIEW, Mathematica, technical report writing

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Programming

Languages – Python (+Django), Puppet, Java, C++, LaTeX, HTML, Javascript
Ways of Life – TDD, version control (git),
Etc. – moving fast and not breaking things PLC programming, HMI design

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Hands-on

Machining – mill, lathe, CNC, 3D printing, welding
Wrenching – construction, assembly

PROJECTS

Fall 2013

Design of a Mechanical Governor – *AME 408 Final Project at USC*
Designed a rotating governor part, given deformation and natural frequency requirements using SolidWorks FEA.

Fall 2013 (4 months)

Intro to Robotics – *CSCI 445 at USC*
Learned localization (particle & Kalman filters), mapping (SLAM & FastSLAM), decision processes (MDP & POMDP), and sensor calibration and use.

Fall 2012
(4 months)

Remote Inspection Vehicle – *Senior Project at USC*
Remote control robot for the 2013 ASME design competition. Designed, built, and programmed the controller and robot.

Summer 2012
(2 months)

Robotic Arm – *personal, for-fun project*
Stepper motor controlled 2-axis arm with my own inverse kinematics. Designed, manufactured, wired, and programmed independently.

AFFILIATIONS & AWARDS

Spring 2014 **USC Aerial Robotics Team** – *Mechanical team*

Fall 2013 **Dean's List** – *USC*

Spring 2010 **Dean's List** – *UMass*

March 2012 **Certified SolidWorks Associate** – *Score: 100%*