

Clayton Salinger Ketner

Mechanical Engineering & Software Development

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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

Counsyl – *Automation Engineer, Automation Service Engineer, Automation Specialist*

Designed new, and improved existing, automation hardware and software for robotic DNA processing lab

- Primary mechanical design engineer
 - Proven track record: no failures in any production run manufactured parts
 - Designed mechanical parts and assemblies in SolidWorks - DFM, DFA, part selection (COTS, OEM)
 - Performed requirements gathering, prototyping, and testing to validate and de-risk
 - Developed part and revision tracking and documentation system
 - Invented multiple novel designs (one patent application)
- Front/back-end software development (Python and Django); platform/infrastructure (Puppet)
- Electrical box wiring for PLC (programmable logic controller)
- Developed PLC software and HMI design
- Performed troubleshooting on hardware/electrical/software issues to identify root cause, provide fixes
- Utilized machine shop skills to create one-off fixtures and parts as needed

June 2014
– Present

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

2009 – 2014

- **BS ME:** CAD (adv. modeling and FEA), adv. strength of materials, linear control systems, heat transfer
- **Minor CS:** Robotics algorithms, artificial intelligence

San Bruno Pet Hospital – *System Administrator*

Summer 2013
(4 months)

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

Robotic Arm – *personal, for-fun project*

Summer 2012
(2 months)

- Stepper motor controlled 2-axis arm with my own inverse kinematics
- Designed, manufactured, wired, and programmed independently

OSIsoft – *Virtual Campus Intern*

Summer 2011
(3 months)

- Independently integrated OSIsoft's data collection software with an external analytics software
- Concluded findings in a White Paper posted to OSIsoft's vCampus website
- Received praise from an outside company (OPX Biotechnologies, Inc.) for the White Paper

SKILLS

Mechanical – SolidWorks

My Favorite
Tools

Hardware Prototyping – my Makergear M2 3D printer, mill, lathe, etc.

Programming – VIM, tmux, Python, Django, git

I/O – Raspberry Pi, Arduino, Teensy

CAD – SolidWorks, Pro-E, Solid Edge, PDM, stress/strain and vibration FEA

Mechanical
Engineering

Design – GD&T, design for assembly and manufacture (DFA, DFM)

Etc. – control systems, MATLAB & Simulink, LabVIEW, Mathematica, technical report writing

Languages – Python (+Django), bash/sh, C++, LaTeX, HTML,

Software
Development

Etc. – git, Linux, TDD, moving fast and not breaking things, PLC programming, HMI design

Machining – mill, lathe, CNC, CAM, 3D printing, welding

Hands-on

Etc. – soldering, wiring and cable management

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%*