

# Patrick Joyce

925-360-5161

<http://www.patrickwjoyce.com>

Patrick@PatrickWJoyce.com

## CAREER OBJECTIVE

To help my company achieve balance between conceptual product design, environmental realities, and fiscal accountability; as well as translating the customer's needs into a production and business ready design.

## TECHNICAL SKILLS

Solidworks

JMP

Star-CCM+

MathCAD

Maple

Solidworks Flow Simulation

PTC Creo

3D Surface Modeling

GD&T

Control Charts & SPC

Sigma Science

Design of Experiment

DFMEA

FEA & CFD

CNC Machining

3D Printing

Injection molding

Aluminum Casting

Sheet Metal

## WORK EXPERIENCE

### Weber-Stephen Products, LLC.

*Design Engineer, Advanced Concepts & Electrics, R&D*

July 2016 – Present

- Primary mechanical engineer on, all new, global electric grill platform.
- Designed and optimized novel electric grilling system to be integrated into our new global grill platform.
- Named on two patent applications (one utility, & one design) related to global electric grilling platform.
- Lead project engineer for iGrill 3 development; Weber's first, connected, consumer electronic product.
- Coordinated the industrial, mechanical, and electrical design of the iGrill 3 with our overseas suppliers, and outside design consultants.
- Designed new iGrill meat probe to improve durability, strength, and weather resistance, while maintaining full backwards compatibility.
- Implemented and ran CFD program within R&D, currently the in house simulation specialist.
- Used DOE to develop LED knob lights for the new Genesis II LX grill platform.

*Associate Design Engineer, Advanced Concepts & Electrics, R&D*

February 2014 – July 2016

- Designed Family Q Built In product for the Australian market.
- Studied new technology for potential application in grilling.
- Incorporated simulation into the product development process.
- Coordinated with industrial design team to ensure that the final product was faithful to the creative vision.
- Collaborated with production engineers to ensure ease of manufacturability from the start of production.
- Participated in pilot program for introducing Six Sigma methodologies to Weber.

*Solidworks Drafter, Drafting, R&D*

October 2013 – February 2014

- Made drawing and model changes per EC markups.
- Established first internal requirements for 3D CAD best practices.

### Prime UV Systems

*Mechanical Design Engineer*

April 2013 – October 2013

- Designed industrial UV curing systems for high speed curing applications
- Implemented PDM software to improve workflow efficiency, and reduce engineering time spent on paperwork.

### V&A Engineering

*Field Technician*

December 2012 – April 2013

- Setup, installed, and calibrated flow meters in sewer systems.
- Performed regular warehouse inventory, and equipment maintenance.

## E2 Consulting Engineers

*Field Technician*

August 2012 – December 2012

- Performed sanitary sewer smoke testing, and manhole inspections

## QuickMount PV

*Engineering Consultant, CAD Operator & Factory Line Worker*

Summer: 2010, 2011, 2012

- Worked on product assembly line.
- Made 3D CAD models and specification sheets for all hardware used by the company,
- Developed and analyzed designs for the QBlock, QBase, and QHook solar panel roof mounting systems.
- Optimized design of cast and extruded aluminum products to reduce production time and costs.
- Performed mechanical analysis of new concepts to predict strength and reliability.

## EDUCATION

**University of Arizona** *Bachelor of Science in Mechanical Engineering*

August 2008 – August 2012

## PROJECT EXPERIENCE

**New 3D Printer Design** *Personal Project*

- Designed and currently building a new 3D printer.
- Printer is designed to work with standard linear motion components with the option for later upgrade to a design that does not use any expensive ball bearings, or machined linear rails.
- Hot end has an integrated load cell that will be used for data collection, automatic bed leveling, and active print quality monitoring.
- Performed multiple DOEs to identify which factors affect speed and quality.

**Thrust-Torque Load Cell** *Crowdfunded Project*

- Project team is based around an internet forum, with the goal of setting a world endurance record in autonomous flight.
- Designed and built a load cell that could independently measure axial and torsional loads of less than 15 lbf.
- Design was iterated and validated using FEA, and then machined by team members across the country.

## AWARDS AND HONORS

- Won *Honeywell Excellence in Aerospace Design* award for senior capstone project.
- Earned rank of *Eagle Scout*.

## PRODUCT LINKS

- iGrill 3 <http://product.weber.com/igrill/igrill3/>
- iGrill 2, iGrill mini, and iGrill meat probe <http://product.weber.com/igrill/>
- Genesis II LX <http://www.weber.com/grills/series/genesis-ii/genesis-ii-lx-s-640>
- Family Q Built In (Q3600AU): <http://www.weberbbq.com.au/barbecues/weber-q/family-q-built-in/family-q-built-in-q3600au/>
- QBlock: <http://quickmountpv.com/technology/qblock.html>
- QBase: <http://quickmountpv.com/technology/qbase.html>
- QHook: <http://quickmountpv.com/technology/qhook.html>

