

KENJI BOWERS

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Creative Mechanical Design Engineer holding a Master of Science degree from Stanford University with strong design and development skills. A hands-on, self-directed learner with proven experience in designing complex mechanical equipment embedded with electronic, pneumatic, and process gas control systems. Seeking to join a world class engineering team, solve challenging technical problems, and bring high technology products to market.

EDUCATION & SKILLS

Stanford University

Master of Science in Mechanical Engineering: Mechatronics specialization (GPA 3.7)

Stanford, CA

Sept 2014 - Dec 2015

Bachelor of Science in Mechanical Engineering (GPA 3.9)

Sept 2010 - June 2014

- Expert CAD user with experience creating and releasing the top-level assembly of a 1200+ component capital equipment tool. Quickly iterates on complex models with FEA tools, produces part and assembly drawings with proper GD&T, and maintains models through PLM software.
- Proven ability to create innovative and cost-effective designs through solid understanding of manufacturing methods and materials selection. Great at modifying parts in the machine shop to resolve assembly issues and enable smooth integration of complex systems. Able to program and run industrial CNC machines and 3D printers.
- Experienced in properly selecting and integrating automation components such as sensors, motors, encoders, actuators, filters, valves, and blowers into mechanical assemblies. Able to wire and debug electrical circuits, create state machine diagrams, and write scripts in C, C++, Java, Python and MATLAB.

EXPERIENCE

Velo 3D (Powder bed laser melting additive manufacturing tool startup)

Campbell, CA

Mechanical Design Engineer

Aug 2016 - Present

- Designed, developed, and released the argon gas purging, recirculation, and cleaning system for the tool. Enabled the tool to have industry leading purge times and eliminated tool downtime while changing filter elements.
- Packaged all subsystems of the tool together, owned the top level solidworks assembly, and released the system BOM. Laid out the argon, CDA, water, cabling, exhaust, and power circuitry of the tool and created the tool facilities installation drawing. Designed the Velo warehouse tool installation layout to maximize tool count.
- Designed, developed, and released the machine frame weldment. Ran multiple FEA studies to ensure no issues during operation and shipping.
- Led the 3rd party combustible powder hazard review of the tool. Drove design changes, procedure specification definitions, and preventive maintenance programs to ensure the tool has redundant safety features in place and is in compliance with all NFPA standards. Heavily involved in the FMEA of the tool. Designed the filter housings so the filtered flammable soot condensate can easily be passivated and discarded safely.
- Lead the external skins/doors project from concept to installation and delivered on extremely tight deadlines.
- Designed the human machine interface of the tool, the operator platform, and redesigned the glovebox.
- Hand built the first alpha and beta machines.

Intuitive Surgical

Sunnyvale, CA

Instruments and Accessories Manufacturing Intern specializing in Automation

June 2013 - Aug 2013

- Developed an automatic manufacturing station using pneumatic cylinders to securely attach and detach manufacturing aids to surgical instruments. Design resulted in reduced tack time and human error on the line by automating a worker's task. Brainstormed, prototyped, tested, made drawings, and sent parts out for machining. Invited to return.

Renovo Motors (High performance electric autonomous vehicle startup)

Campbell & Gilroy, CA

Mechanical Engineering Intern specializing in Composites

June 2012 - Aug 2012

- Designed and manufactured carbon fiber parts using vacuum resin infusion. Began by wiring 480V 3 phase into a shop, brought a used CNC router online, milled the plug out of MDF, finished the plug by priming and sanding, created the mold with tool coat and fiberglass, and manufactured the carbon parts from the mold. Invited to return.

PERSONAL PROJECTS*

Waterbot

Palo Alto & San Mateo, CA

Indoor gardening robot exploring the future of automated agriculture

Jan 2016 - July 2016

- Invented a track-riding irrigation robot system that precisely dispenses water from a 2 DOF SCARA arm. Waterbot fills its onboard tank at the filling station, moves along the track installed in a garden, uses its onboard camera to detect plant locations, and waters each plant individually.

Icarus

Stanford, CA

Large format Delta FDM Printer build

Sept 2013 - Sept 2014

- Designed, built, and tuned an extremely fast plastic filament printer. Features include: zero-backlash magnetic ball and socket joints, huge 17" diameter by 17" height cylindrical build volume, rigid all aluminum chassis, low mass end effector, and a high torque Bowden extruder. Icarus has been an invaluable tool, allowing me to develop other ideas like Waterbot.

Fetch

Stanford, CA

Indoor service robot concept

Jan 2014 - April 2014

- Learned the intricacies of CNC machining firsthand by modeling, programming, and milling a wall mounted helper robot. Fetch can quickly bring objects to you and them away by using customizable tools. These tools dock to Fetch via its front facing dovetail slot and receive power and control signals through a pogo-pin style electrical interface.

*Media available at www.kenjibowers.com