

# Randall Fletcher

2336 Castro Street  
San Francisco, CA 94131  
(302) 981-7066  
randall@randallfletcher.com

Mechanical Design Engineer with twenty plus years of experience in robotics, automation, manned submersible and crane industries. Innovative, analytical, and practical engineer with ability to balance these qualities and bring new products to market. Team leader with the ability to inspire, guide and persuade others to succeed.

## EXPERIENCE

### Cafe X Technologies, San Francisco, CA — Staff Mechanical Engineer

Dec. 2018 - PRESENT

Responsible for leading the design of products throughout the robotic cafe kiosk. Experienced with full life-cycle development from early R&D through production. Strong experience with concept generation, electrical/mechanical calibration, simulation, prototyping, drawings, GD&T, manufacturing considerations, and integration.

Experienced with leading a team of engineers, with a balance of autonomy and guidance, to develop the most advanced machines in the industry.

### DeepFlight, Richmond, CA — Principal Mechanical Design Engineer

Feb. 2017 - Sept. 2018

Responsible for the development of mechanical hardware for the Super Falcon 3S and all new Dragon submarine. Responsibilities include ideation, prototyping, designing, testing (iterative, FEA, empirical) and managing manufacturing relationships.

Primary responsibilities are composite fuselage styling and mechanical design for propulsion, batteries, and life support systems. Developed composite pressure hull to withstand 6:1 (600 meter) pressure test. Process included iterating on design based on FEA results. Other responsibilities include overall fit up and assembly of entire submarine and engineering drawings.

### Google[x] via Akorbi, Mountain View, CA—Mechanical Designer, Autolaunch

Aug. 2016 - Feb. 2017

Responsible for developing mobile RF/EMI chambers to test payloads prior to launch. Using Solidworks, I designed/engineered a mobile RF/EMI chamber within a 20 foot shipping container, a loading/unloading system for payloads, as well as mobile command center in a separate 20 foot container.

### DeepFlight, Richmond, CA— Chief Designer

March 2014 - July 2016

Responsible for the whole product life cycle, including ideation, prototyping, designing, iterative/FEA/empirical testing and setting up manufacturing of the DeepFlight Dragon and Super Falcon 3S. Primary responsibilities are fuselage styling and mechanical design for

## SKILLS

Autodesk Inventor  
Solidworks  
Product Design  
3D Parametric Modeling  
Composites  
Digital Prototyping  
GD&T  
Autodesk Vault  
Solidworks PDM  
Finite Element Analysis  
Problem Solving  
Product Lifecycle  
Project Management  
Alias Design  
Adobe Illustrator  
Adobe Photoshop  
Adobe InDesign  
Autodesk AutoCAD

## CERTIFICATIONS

Autodesk Inventor  
Solidworks  
Alias

propulsion, batteries, pressure hull and life support systems. Other responsibilities include overall fit up and assembly of entire submarine.

- Generated surface models of fuselage using Autodesk Inventor and Autodesk Alias to create class A surface molds.
- Designed prototype thruster and optimized design based on multiple bollard pull tests. Applied result to final production thruster to achieve a 15% increase in efficiency.
- Developed thruster kort nozzle which reduced thruster assembly time and allowed for easy bench testing.
- Optimized overall design of submarines to reduce assembly time from 3 months to 1 month. Major submarine assembly can be fully disassembled in 2 days by 1 person.
- Created mechanical CAD drawings and communicated the functional requirements using GD&T.

## **Bigge Crane & Rigging, Richmond, VA— Lead Designer AFRD Development**

Sept. 2008 - March 2014

The Bigge AFRD is the world's largest land-based super-crane that will revolutionize nuclear power plant construction throughout the world. The AFRD consists of over 200,000 parts which were designed using Autodesk Inventor parametric modeling software.

Working closely with engineers and designers, we created the world's largest land-based crane capable of lifting 15 million pounds. I managed a team of 6 designers in-house and 4 outside design consultants to complete the project on time.

## **Bigge Crane & Rigging, San Leandro, CA— Project Manager**

Aug. 2007 - Sept. 2008

Responsible for designing and managing heavy rigging and transportation projects for nuclear and fossil power plants, transportation and refineries.

Managed logistics for \$30 million worth of equipment for a new power plant in Millville, NJ. Off loaded and transported equipment with speciality hydraulic platform trailers, 15 miles to the job site and installed using hydraulic gantries and 450 ton crane.

Managed the replacement of 500 ton generators and reactor heads at multiple nuclear power project across the United States.

## **Bigge Crane & Rigging, San Leandro, CA— Project Designer**

Jan. 2005 - Aug. 2007

Provided innovative designs for heavy rigging and heavy transportation projects at nuclear and fossil power plants and petroleum refineries.

Projects include Bigge's 200 foot tall modular lift tower capable of lifting 3,500 tons, transportation and installation of 550 ton generators and nuclear reactor heads at multiple power plants, and installation of 1,800 ton transition span of the new San Francisco/Oakland Bay Bridge.

## **Sargent & Lundy, Wilmington, DE— Structural Designer**

May 2001 - Oct. 2004

Created comprehensive designs for electric generation and power distribution

projects. Coordinated 3D model with various project teams to ensure conflict-free construction.

## **EDUCATION**

### **Hodgson Vocational Technical High School, Newark, DE**

Sept. 1990 - July 1995

Studied technical drafting, CAD, mechanical design and architecture