Jacqueline Song

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EDUCATION

The Cooper Union for the Advancement of Science and Art, New York, NY
- *Bachelor of Engineering*, Mechanical Engineering, expected May 2015
- Full-tuition scholarship *2011-2015*
- *Cumulative GPA: 3.7/4.0*

EXPERIENCE

Hardware Engineer at Matterport, Mountain View, CA *Summer 2014*
- Relieved camera production bottleneck by implementing electromechanical system to automate labor-intensive calibration movements.
- Specified imaging hardware and developed evaluation procedures for candidate components.
- Supported engineering activities including hardware troubleshooting, reverse engineering, and process documentation.

Mechanical Design Engineer at Social Bicycles, New York, NY *Spring 2014*
- Supported design team in redesign of bicycle locking mechanism for improved manufacturability and ease of use.
- Prepared electronics housing components for injection molding using SolidWorks.

Teaching Assistant for Design and Prototyping, Prof. Eric Lima, The Cooper Union *2013-2014*
- Developed machine design project that gave students hands-on experience in designing, building, and troubleshooting electromechanical systems.
- Guided students though prototyping tasks in laser cutting, machining, and injection molding.

Electromechanical Engineer at Carson Optical, Hauppauge, NY *Summer 2013*
- Designed and prototyped novel optical and electromechanical systems, working independently and in teams; developed one consumer product from concept to manufacture.
- Optimized injection-molded parts in SolidWorks for manufacture and assembly.

Consultant for "LURE," MaDora Frey, New York, NY *2012–2013*
- Advised client from concept to manufacturing of kinetic sculptures for gallery exhibition.
- Prototyped sculpture systems, including aesthetic mechanisms and microcontroller electronics.

PROJECTS

Curved Layer Carbon Fiber Reinforced Polymer FDM *Senior Design, 2014–2015*
- Develop manufacturing process and Fused Deposition Modeling (FDM) printing method for continuous carbon fiber reinforced thermoplastic filament.
- Optimize carbon fiber orientation in printed parts using finite element analysis.
- Modify existing 3D printing toolchains to print curved-layer parts using a 6-DOF robot arm.

Notchmatic *Design Elements, Fall 2014*
- Lead the design and build effort on workpiece fixturing subassembly for an industrial tube notching machine; collaborate with teammates on cost, scheduling, and systems integration.
- Develop safety, usage, and installation manuals for future shop use.

3D-printed injection molds *Independent, 2013*
- Demonstrated the viability of 3D-printed injection molds as a prototyping tool.
- Explored effect on molded part quality of different mold print systems, settings, and materials.

Arduino Robot Pac-Man *Microcontroller Projects, 2012*
- Designed and implemented Arduino controlled autonomous and remote-controlled robots and a robot-sensing dot matrix maze based on the classic arcade game.

Gumball Machine *Principles of Design, 2011*
- Designed and built an Arduino controlled electromechanical gumball dispenser game featuring interactive mechanical paths, including a 3-axis crane arm and binary logic puzzle.

SKILLS

Computer: proficienct in SolidWorks, C++, ANSYS, MATLAB, AutoCAD, LabView, Python, Linux, Microsoft Office, LaTeX, CSS, HTML, Javascript, Arduino, Adobe CS.
Manufacturing processes: design for injection molding, machining, welding, casting, sewing.
Mechatronics: motor and actuator control; digital logic design; PCB design; sensor integration; microcontroller-based control systems.
Machine shop: comfortable with TIG welding, mill, lathe, drill press, rotary tools, hand tools.