Amanda Ghassaei

amandaghassaei.com
amandaghassaei@gmail.com

EDUCATION

MIT MS Media Arts and Sciences, MIT Media Lab

Fall 2014 - Fall 2016 | Cambridge, MA
Master's Thesis: Rapid Design and Simulation of Functional Digital Materials advised by Neil Gershenfeld

POMONA COLLEGE BA Physics, Minor Chemistry

Fall 2007 - Spring 2011 | Claremont, CA
Senior Thesis: Design and Optimization of a Crank-Based Leg Mechanism advised by Dwight Whitaker

EXPERIENCE

ADOBE | Research Engineer

March 2018 - present | San Francisco, CA

- Working on fabrication-related research / design tools
- Lead developer of Fantastic Fold - a design tool for folded packaging

MIT CENTER FOR BITS AND ATOMS | Research Assistant

Sept 2014 - Dec 2017 | Cambridge, MA

- GPU-accelerated origami physics engine with WebVR interface: Origami Simulator
- GPU-accelerated finite element solver for discretely-assembled robotic systems: AMOEBA
- Part of design team for video game based on AMOEBA work (see above) with E-Line Media
- Generalized reconstruction techniques for 3D curvi-planar surfaces from volumetric CT scan data
- Computational Fluid Dynamics simulation with WebGL: Mixed Grid-Particle Methods • Vortex Shedding
- Other Design/Simulation/Optimization tools: Shell Form Finding • Truss Optimization • Linkage Optimization • Michell Structures

NASA | Visiting Researcher

Summer 2015 | Ames Research Center, Mountain View, CA

- Developed CAD tools, simulation methods, and path planning strategies for reconfigurable, robotically-assembled aerospace structures

AUTODESK / INSTRUCTABLES | Software Engineer / Assistant Tech Editor

Jan 2012 - Aug 2014 | San Francisco, CA

- Lead developer of Instructables iPad app and iPhone iOS7 redesign - featured in the App Store, June 2014
- Front-end developer for the International Instructables site (Django, Backbone.js), Instructables editor (Backbone.js), and automated web testing (Selenium)
- Sponsored content creation for RadioShack and Jameco Electronics
- Tech/electronics editorial content (basic electronics tutorials)

SKILLS

Web: Three.js, WebGL, WebVR, glsl, Require, React, Redux, Backbone, D3, JQuery, HTML, CSS, Bootstrap, Electron, Jasmine

Programming: JavaScript, Node, Python, C++ (embedded), Objective C/iOS, CUDA, OpenCL, Java, MATLAB, Mathematica, MaxMSP, PureData, PyCharm, XCode, VSCode, Git

2D / 3D Design: Fusion 360, Solidworks, Onshape, Eagle (PCBs), Photoshop, Illustrator, Processing

Fabrication Tools: Machine shop and wood shop, laser cutter, 3D printer, ShopBot, Tormach, 3/4/5 axis milling and toolpathing, waterjet cutter, HSMWorks

Electronics: Atmel AVR, Mbed (ARM), Arduino, PCB design and fabrication, analog and digital circuit design

PUBLICATIONS

Ghassaei A, Demaine E, Gershenfeld N. **Fast, Interactive Origami Simulation Using GPU Computation** 7th International Meeting on Origami in Science, Mathematics and Education — 2018

Langford W, Ghassaei A, Jenett B, Gershenfeld N. **Hierarchical Assembly of a Self-Replicating Spacecraft** IEEE Aerospace — 2017

Langford W, Ghassaei A, Gershenfeld N. **Automated Assembly of Electronic Digital Materials** Proceedings of the 2016 Manufacturing Science and Engineering Conference — 2016

Instructables Project Documentation — 2012-present

GitHub — 2013-present

BOOK FEATURES

Active Matter by Skylar Tibbits, **MIT Press** — 2017

Printing Things: Visions and Essentials for 3D Printing by C Warnier and D Verbruggen, **Gestalten** — 2014

C Programming For the PC the MAC and the Arduino Microcontroller System by Peter D. Minns — 2013

TEACHING

How to Make (Almost) Anything TA for graduate course at **MIT Media Lab** , Cambridge, MA — 2015-2018

Mentored a high school student researcher, **MIT** , Cambridge, MA — 2016-2017

Fab Lab installation and training in **Armenia** , **Rwanda** , and **Bhutan** — 2015-2017

Intro to Arduino , **Intro to MaxMSP** Workshops at **Women's Audio Mission** , San Francisco, CA — 2013/2014

Arduino and MIDI Workshop at **California College of the Arts** , San Francisco, CA — 2013

MEDIA COVERAGE / INTERVIEWS

Design, Sound, and Science Ableton — 2014

Mini Interview Cycling74 — 2014

Laser-Cut Wooden Records Give New Meaning to Tree Rings Wired.com — 2013

3-D printing guitars and records CNN — 2013

Click BBC World Service Radio — 2013

Listen To The First 3-D-Printed Records Ever Made FastCoDesign.com — 2013

First 3-D Printed Records Sound Awful – And Amazing Wired.com — 2012

EXHIBITIONS / TALKS

Interactive Fluid Simulation **File Festival** , Sao Paulo — 2018

Uber Data Visualization Nights , Building an Origami Simulator in WebGL, San Francisco CA — 2018

Chrome Experiments Installation, **Google IO** , Mountain View CA — 2018

3D printed record pop-up store, **Bacardi Beginnings** , London — Dec 2013

Official Selection, **Imagine Science Film Festival** , New York NY — 2013

Autodesk Design Night , San Francisco CA — 2012/2013

INVISIBLE DESIGN , **Milano Design Week** , Milan — 2013

SXSW Create , Austin TX — 2013