JOHN MORELAND

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EXPERIENCE + EDUCATION

olin college
robotics engineering
2015-2019

- Expected graduation: **december** 2019
- Critical focus on hands-on, project based learning
- **Notable coursework:**
  - Affordable Design and Entrepreneurship
  - Robotics Systems Integration
  - Scientific Instrument Design
  - Finite Element Analysis
  - User-Oriented Collaborative Design
- **Highlight projects:**
  - Affordable cassava grater *(below)*
  - Mechanical and environmental analysis of carbon fiber consumer products
  - Small-batch anodizing
  - Student culture research at MIT
  - Design for urban shamanic healers
  - Path planning optimization algorithms

syng
product design
2019 summer

- Owned a user-facing subassembly
- Designed creative solutions to fulfill ambitious mechanical, acoustic, packaging, and power usage goals
- Incorporated standard power and data interconnect into challenging form factors, while balancing DFA, DFM, structural, and aesthetic req's
- Worked closely with Industrial Design team to define and achieve broader product aspirations.
- Developed mechanical components and software for "works-like" models
- Coordinated with vendors to release CNC and 3D printed parts for both cosmetic and functional models

apple *// mac architecture*
product design
2017-2018, 12 months

- Designed, fabricated, and tested prototypes of developing products
- Worked cross functionally with teams to fulfill industrial design, thermal, and acoustic product requirements
- Created experience models
- Heavily utilized rapid prototyping techniques including laser cutting and 3D printing (polyjet)
- Machined and modified parts using mills, lathes, bandsaws, etc.
- Coordinated with vendors to manufacture parts on tight timelines
- Analyzed part tolerances via x-ray and structured light 3D scans
- Traveled overseas to assembly line

cafe x
mechanical engineering
2017 summer

- Designed and tested future iterations of the robotic cafe and peripherals
- Established internal mechanical engineering infrastructure
- Expanded in-house prototyping capabilities

boosted boards
mechanical engineering
2016 summer

- Prototyped lightweight electric vehicles as part of the new product team
- Designed and fabricated electro-mechanical subassemblies
- Researched and ran urban transport experiments

simplehuman
research + development
2014-2015, 12 months

- Developed household products that improve daily tasks
- Created first-pass prototypes for proof of concepts after teaching myself arduino and basic circuit design
- Reverse-engineered rival products

PROJECTS

affordable cassava grater
mechanical engineering
present

- Senior capstone in Affordable Design
- Designing an accessible, electric cassava grater for low-income women in rural Ghanaian communities in collaboration with non-profit Queentech
- Travelled to Ghana to build prototypes, meet operators, and diagnose/repair machines in the field
- Redesigned machine architecture to improve reliability, reduce part count, minimize cost, and simplify sourcing.
- Performed hand calculations and FEA on machine loading conditions
- Coordinated with overseas suppliers to manufacture AC induction motors
- Analyzed bearing failures in harsh environments and researched mitigation paths

CNC rolling plotter
robotics, mechanical design
2018

- On a three week timeline, I designed and built a 3-axis CNC sharpie plotter for 31" tyvek rolls.
- Prototyped entirely using 80/20, lasercut parts, mcmaster components, and electronics
- Originally used for printing ~150 feet of poster for an educational conference hosted by Olin.
- Inspired by Thibault Brevet

CNC egg decorator
robotics, mechanical design
2016 fall

Designed a 3-axis cylindrical CNC machine capable of drawing vector shapes onto eggs. Fabricated with lasercut and 3D-printed components.

SKILLS

Prototyping
Mill (manual, CNC)
Lathe (manual, CNC)
Laser Cutter (epilog, trotec)
3D Printer (FDM, polyjet)
Sand Blasting
Circuit Design + Soldering

Analysis
3D Scanner (structured light, X-ray)
Instron
OMM + CMM
SEM

Mechanical Software
NX (preferred)
Solidworks
Ansys (mechanical, fluent)

Code	**Design**
Python	Illustrator
Arduino	Photoshop
Matlab	Indesign