Miles Ingram

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Bits
Bots
Bio

EDUCATION

Bard College • Annandale-on-Hudson, NY 2013
BA in Biology

EXPERIENCE

YaHerd (yaherd.co) • Creator 2017

YaHerd is an event planning web app that allows you to organize your friends whether or not they have Facebook. I created it because many of my friends left Facebook over privacy concerns, leading to the absurd situation of texting them screenshots of upcoming Facebook events I was planning. With YaHerd you can have an attractive and streamlined event planning experience, no account necessary.

- Combined my full-stack development expertise with my brother's design / UX expertise to build the application from the ground up.
- Developed the application to be massively scalable using a combination of cutting-edge server and cloud-based technologies.
- Managed all aspects of domain setup and application hosting / deployment.

Wyss Institute at Harvard University • Systems Engineer 2016

Developed a robotic platform for human tissue culture and experimentation. The robot was designed to automatically perform the complex liquid handling, climate control, and imaging tasks necessary for culturing human organ tissue within microfluidic devices. Additionally, I built a web-based user interface to plan, schedule, and remotely manage simultaneous experiments on multiple robots.

- Led all aspects of robot design, development, and construction.
- Went through multiple design iterations to optimize for robot functionality, user-friendliness, and long-term stability.
- Worked closely with our biology team to design the robotic platform and user interface to synergize with their preferred workflows.

Wyss Institute at Harvard University • Microdevice Design Engineer 2014

Designed and fabricated plastic microfluidic chips for culturing human organ tissues. The microchips enabled tissue culture with unparalleled fidelity by utilizing complex microstructures and bio-coatings that mimic the cellular environment in the body. Ultimately the microchips could be used to accelerate the drug development process by providing a more accurate model of human organ tissues.

- Made major design improvements to the microchips allowing for improved cellular compatibility and experimentation throughput.
- Overhauled multiple aspects of the fabrication process to greatly improve fabrication efficiency and yield.
- Designed a specialized quality control tracking application that allowed for a data driven design iteration process.

Bard College • Software Engineer 2013

Worked on a cost-effective direct laser writing (DLW) system for the fabrication of microfluidic devices. The system coupled a standard fluorescence microscope, a 3-axis stage, and a UV laser to generate complex patterns with high precision. To make the system as user friendly as possible I programmed a custom user interface for pattern design and machine calibration.

- Helped develop the school's first DLW system within a tight budget.
- Created a powerful user interface that greatly simplified pattern generation and execution.
- Helped students utilize the system for their school projects and theses.

PUBLICATIONS

A robotic platform for fluidically-linked human body-on-chips experimentation 2019
Nature Biomedical Engineering (In review) • Wyss Institute
www.biorxiv.org/content/10.1101/569541v1

Quantitative prediction of human drug pharmacokinetic responses enabled by fluidically coupled multi-organ chips 2019
Nature Biomedical Engineering (In review) • Wyss Institute

Mature induced-pluripotent-stem-cell-derived human podocytes reconstitute kidney glomerular-capillary-wall function on a chip 2017
Nature Biomedical Engineering • Wyss Institute
www.ncbi.nlm.nih.gov/pubmed/29038743

A convenient direct laser writing system for the creation of microfluidic masters 2015
Microfluidics and Nanofluidics • Bard College
link.springer.com/article/10.1007/s10404-015-1574-4

SKILLS

- Full Stack Engineering
- Database Design
- UI / UX Design
- Javascript
- HTML
- CSS / SASS
- Vue / Vuex
- AngularJS
- Node.js / Express.js
- MongoDB
- Firebase
- Shell Scripting
- Arduino
- C++
- DNS Management

- Robot Control Architecture
- Task Scheduling
- Computer Vision
- CAD
- Solidworks
- CNC Fabrication
- Finite Element analysis
- EMI Reduction

- Microfluidics
- Soft Lithography
- Cleanroom Training
- Tissue Culture
- BSL2+ Training
- Direct Laser Writing

COURSEWORK

- Data Structures
- Intro to Computing: Semantic Web
- Calculus I & II

- Biology-Inspired Machine Learning
- Intelligent Robotics and Perception
- Neural Networks and Deep Learning

- Prokaryotic and Viral Genetics
- Eukaryotic Genetics
- Biochemistry
- Cancer Biology
- Virology
- DNA / RNA Seminar
- Biostatistics
- Ecology and Evolution
- Drugs and Human Behavior
- Nano Chemistry
- Physical Chemistry
- Organic Chemistry I & II
- Basic Principals of Chemistry I & II