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

2019

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

Mature induced-pluripotent-stem-cell-derived human podocytes reconstitute kidney   2017
glomerular-capillary-wall function on a chip
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