

## Languages

C/C++/Obj-C, Python, Java,  
MATLAB, HTML, CSS, JS

## Technologies

AWS, Azure, Flask (*REST*),  
DynamoDB, Tensorflow,  
OpenCV, Apache Spark,  
Embedded Systems  
(*MSP430, Arduino, RTD*),  
Android/iOS, Scikit-learn

## R&D Skills

FFT, DWT, Machine  
Learning, Collaborative  
Filtering, Kalman Filtering,  
PID Controls, Circuit Design,  
Image Processing

## Soft-Skills

Agile/Scrum  
(*Axosoft/JIRA*),  
Grant-writing, Lean Startups,  
Business Development,  
Customer Development

## Relevant Courses

Data Structures &  
Algorithms  
Systems Programming  
Discrete Math  
Programming Language  
Concepts  
Computer Org & Design  
OOP (Java)

## Unrelated Interests

Music (*Clarinet, Guitar,*  
*Production*), Club Tennis,  
Hackathons, Barista-ing,  
Dorm-Room Horticulture

## Education

Penn State, Class of 2018: B.S. Computer Science

Major GPA: (3.84/4.00)

## Work Experience

Musical Minds LLC: *CEO, CTO*

Nov 2015 - Now

- Directed a 21-person team in the creation of brainwave-sensing headphones and a wellness-based music recommendation engine
- Developed a REST API using AWS, Flask, DynamoDB, and Apache Spark for collaborative filtering-based recommendations
- Designed EEG biopotential amplifiers and signal processing/machine learning algorithms on a CC430 MCU for mental state classification
- Wireframed mobile applications and headphone designs for developers

Microsoft: *Student Partner*

August 2015 - Now

- Delivered 12 tech workshops on MS developer tools for college students
- Trained with tools including Azure, MS Cognitive Services, and IoT devices
- Volunteered at high schools and middle schools through "Hour of Code"

Progeny Systems: *Software Engineering Intern*

May - August 2015

- Created web-scrappers in Python to collect Facebook images for CNN training
- Deployed scrapers on EC-2 instances to acquire a 3,000,000+ image dataset
- Designed GUI in Java to show facial feature similarities, visualized using t-SNE

## Projects

Lunar Lion: *Guidance, Nav, and Controls Lead Engineer*

Jan - May 2016

- Directed 35 students under 5 subsystems including flight software, ground controls, modelling and controls, systems testing, and visual guidance
- Interfaced the spacecraft's health monitoring, navigational, and communication sensors with C/C++ software using Arduinos and RTD controllers running Linux
- Coordinated integration with the power, structures, and propulsion systems to prepare the craft for its first free-flight test

Lunar Lion: *Visual Guidance Lead Engineer*

April - Dec 2015

- Pioneered a monocular, topographical reconstruction system with OpenCV
- Implemented a 3D spline interpolation algorithm that leverages the parallax motion of lunar surface features
- Applied 3D reconstruction algorithm to risk analysis classification system for landing sequence adjustments

Intelli-DJ: *Team Leader and Developer*

Nov 2015

- Leveraged neural networks to identify emotions using the Microsoft Band 2
- Integrated Android app with MS Band and Spotify API to identify a user's taste in music based on changes in their physical state

Lysdexia: *Team Leader and Developer*

Nov 2015

- Spearheaded research on treatment methods for dyslexia in young children
- Designed 4 Xbox Kinect games in C# for improving specific literacy skills

## Awards and Achievements

Launchbox Fall 2016 Cohort Graduate

Dec 2016

Distinguished Speaker, President's Tailgate

Nov 2016

Inc. U Video Pitch Competition Winner (\$2500)

Oct 2016

PennTap Learning Factory Grant Recipient (\$3500)

Aug 2016

Slavin Foundation Fellow

July 2016

Erickson Grant and Whitman Endowment Recipient (\$5000)

April 2016

1st Place at HackPSU

Nov 2015

Penn State Engaged Scholarship Award

Nov 2015

Leonard Center Speech Contest for Engineers Semifinalist

April 2015