

# Maxwell Roling

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## ACADEMIC PROFILE

### University of Pennsylvania (8/17 - 5/21)

Computer Science, Systems Engineering

Current GPA: 3.53

Current Coursework: *Algorithms & Data Structures, Decision Models, Linear Algebra, Dynamic Systems, IP and Business Law*

## NOTABLE PROJECTS

### Cryptocurrency Trading Algorithms

Aggregating data across internet for Bitcoin price prediction, training various ML models and implementing a buy/sell strategy using the predicted information (*Python: TensorFlow, scikit-learn, WebSockets, MongoDB, Pandas, Spark*)

### PottyMouth

iOS application intended to stop a user from swearing. When activated, it records what the user says and plays a loud, piercing tone whenever they curse (*Swift: SFSpeechRecognizer, AVAudioPlayer*)

### Groupify

Hackathon project - Allows Spotify users to become “digital jukeboxes”. Other users can queue their favorite songs on their friends’ devices using SMS texts (*Swift, Node.js: Spotify, Twilio, MongoDB*)

## TECHNICAL SKILLS

### Programming Languages

Java, Python, Swift, JavaScript, Objective-C, MATLAB, OCaml

### Technologies

MongoDB, AWS, MYSQL, Dask, Spark, Pandas, Numpy, multithreading, REST API's, Scikit-Learn, Tensorflow, Keras, WebSockets, Arduino, Raspberry Pi

### CAD + 3D Design

Solidworks, Autodesk (Inventor, Fusion), and Blender. Experienced at building, maintaining, and printing with FDM 3D Printers

## EXPERIENCE

### Machine Learning and Psoriasis Research (5/18 - 9/18)

- Gelfand Clinical Research Lab, University of Pennsylvania
- Awarded \$5000 grant from National Psoriasis Foundation
- Built ML models that predict psoriatic severity and uncovered related comorbidities from Electronic Medical Records
- Currently writing paper for submission to Journal of Psoriasis and Psoriatic Arthritis

### Teach for America Data Analytics Fellowship (1/18 - 5/18)

- Used machine learning and natural language processing to find patterns and solve recruitment problems for TFA

### Instructor, Digital Media Academy (5/17 - 8/17)

- Taught iOS development, programming, Arduino/Raspberry Pi and 3D design & printing to students at summer camp

### 3D Printing and Radiation Oncology Research (5/16 - 8/16)

- Collaboration with Dr. Strasser, Christiana Hospital
- Designed and 3D printed custom medical devices for specialized radiation treatment
- Wrote script that automates the design of these devices when given patient CT scans and other relevant information

### Swim Instructor (9/17 - Present)

- Teach swim lessons to persons of all ages

## LEADERSHIP

### Secretary, Penn Aviation Club

- General administrative duties
- Organize events and recruit members

### Stouffer College House Steering Committee

- Managed fund of \$10000 to be used for communal activities

### Co-founder of Programming Club, Lower Merion High School

- Organized local programming competitions with 100+ students in attendance
- Taught computer science to students of all ages and underprivileged students in West Philadelphia

### Senior CAD Designer, Dawgma Robotics, Lower Merion High School

- Competed at world championships in '16
- Lead the design of climbing mechanism and game piece intake for robot in '17

### Captain of Swim Team, Lower Merion High School

- Leader of swim team
- Competed at State Championships in '16 and '17
- Hold various records and received numerous awards