

# Spencer Ng

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## SUMMARY

Developer specializing in Android and backend development with experience in robotics and ECE. Seeking software and research internships for summer 2019.

## EDUCATION

### MIDDLESEX COUNTY ACADEMY

ELECTRICAL & COMPUTER

ENGINEERING MAJOR

September 2015 - June 2019

Cumulative GPA: 4.0/4.0

### MIDDLESEX COUNTY COLLEGE

DUAL ENROLLMENT | EDISON, NJ

September 2018 - June 2019

## SKILLS

### LANGUAGES

Proficient:

Java • Python • C++ •  $\text{\LaTeX}$

English • Cantonese

Familiar:

JavaScript • HTML • CSS • C#

Assembly • MATLAB • Lua • Arduino

### LIBRARIES & FRAMEWORKS

Android • REST APIs • OpenCV

.NET • Materialize • ROS • and more...

### TOOLS

Git • GitHub • Multisim • Gradle

Adobe Creative Suite • MkDocs • Defold

## COURSEWORK

Linear Algebra • Discrete Math

Circuit Analysis • Digital Electronics

Assembly & Microcontrollers

Object-Oriented Programming in C++

Signal Processing

Communication Systems

## HONORS

Central Jersey Math League ARML Team

Captain (#5 region, B division)

Top 20%, Math Modeling Challenge

Top 10%, NJ High School Physics

Top-ranked rookie in NJ, Science Olympiad

2-time Bronze, National Spanish Exam

AP Scholar with Honor

## PROJECTS

### RAIDER ROBOTIX | STRATEGY & SCOUTING SUBTEAM LEAD

North Brunswick, NJ | Sept. 2015 - Present

- Lead, train and assess 30+ scouts on annual FIRST Robotics Competition game
- Develop and maintain an **Android app** to collect and serialize data into JSON, to be sent via Bluetooth to **desktop Java client** and **Tableau** for analysis
- **Publish website** with Java and Android exercises to teach new members
- Mentor elementary school students to strategically design, build, and program robots using LEGO Mindstorms to compete in mentor-designed challenge
- Build **Java library wrapper** for **The Blue Alliance API** with Gson
- Mount Olive (2017 & 2018), Montgomery (2017 & 2018), and Hatboro-Horsham (2018) District Event Winners
- FIRST Mid-Atlantic District Championship Finalists, 2016 & 2018
- FIRST World Championship Division Semifinalists, 2017 & 2018

### MIT BEAVER WORKS UNMANNED AERIAL VEHICLE RACING

Cambridge, MA | Summer 2018

- Developed localization, vision, and control algorithms with Python and ROS
- Navigated Intel drones autonomously without use of motion-capture or GPS

### LAUNDRY MANAGER AND OPTIMIZER

Philadelphia, PA & Edison, NJ | Sept. 2018 - Present

- Built prototype Android app to recognize laundry tag symbols using models trained with Google Cloud's AutoML Vision API (PennApps XVIII Top 30 Hack)
- Currently designing an IoT hamper that allows families and college students to optimize laundry loads and energy usage based on deposited clothes

### HACKATHONS | PENNAPPS CAMPUS AMBASSADOR

Philadelphia, PA | Sept. 2016 - Present

- Programming contests to develop solutions to real-world problems
- Promoted PennApps and tripled the Academy's participation (~10 to 30+)
- PennApps XVII Top 30 Hack | **Synaptic Gestures**: User-friendly Electron app to increase productivity by creating new Synaptics touchpad desktop gestures
- **CommuteAlarm**: Self-adjusting alarm based on traffic and wakeup routines

## ACTIVITIES

### MAGIC (PERFORMING ARTS) | PERFORMER & INSTRUCTOR

New Jersey | Oct. 2015 - Present

- Developed & teaching a 20-week sleight-of-hand magic course to children 8+
- Volunteer & freelance performer at community events and birthday parties

### CHINESE HERITAGE SCHOOL OF NJ | TEACHER ASSISTANT

South Brunswick, NJ | Sept. 2017 - Present

- Facilitate student learning and evaluation (speaking, reading, writing Chinese)
- Create classroom activities and promotional videos for the school
- Oversee logistics and annual productions as Stage Manager

### CLASS OF 2019 COUNCIL | PRESIDENT (9, 12) & VICE PRESIDENT (11)

Edison, NJ | Sept. 2015 - June 2016 & Sept. 2017 - Present

- Raised over \$5,000 by organizing class meetings and creating logistics plans for fundraisers, lunches, and dances hosted by my class
- Budgeted for prom, yearbooks, graduation, and class trips during senior year