

 melaniesaw.com  
 github.com/soybean  
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# MELANIE SAWYER

currently studying cs & math @ columbia

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## education

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**COLUMBIA UNIVERSITY**  
Class of 2020  
GPA: 3.88/4.0

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Relevant coursework: Advanced (Systems) Programming, Fundamentals of Computer Systems, Data Structures, Discrete Mathematics, Calculus III, Linear Algebra, Ordinary Differential Equations

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## experience

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**SKILLSHARE**  
Software Engineering  
Intern/hackNY Fellow  
may 2017 - august 2017

One of 29 hackNY Fellows selected for 2017. Interned at Skillshare. Optimized slow SQL queries (one optimization decreased load time on main page by 2.1 seconds). Also built new API-side features for the mobile app. Primarily utilized PHP, JS, HTML, CSS.

**NATIONAL INSTITUTE  
OF STANDARDS AND  
TECHNOLOGY**  
Research Intern  
may 2016 - august 2016

Optimized motorized mirrors used to couple single photons and solid-state lasers into fiber-optic cable. Tested and analyzed various optimization methods, including simulated annealing and conjugate direction. Primarily used Python and Assembly.

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## projects

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**BRAILLEBOT**  
columbia devfest 2017  
[github.com/melsawyer/braille-bot](https://github.com/melsawyer/braille-bot)

Built a braille teaching device. Utilized an Arduino & 6 servo motors to generate braille. User would then say what letter they felt, and using Microsoft text-to-speech and speech-to-text APIs, bot would respond and tell the user if they were correct or incorrect. Built in Python and C++. Won best use of Microsoft APIs and best biomedically-inspired hack at DevFest 2017.

**#MTASucks**  
hackNY 2017  
[github.com/melsawyer/mta-sucks](https://github.com/melsawyer/mta-sucks)








Using D3 and Twitter API, visualized tweets from disgruntled MTA passengers based on location and determined which train they were complaining about. Built with Python & JS.

## awards

- **Columbia Dean's List**  
fall/spring 2016-17
- **DevFest Hackathon**  
best use of microsoft APIs  
best biomedically-inspired  
hack
- **NCWIT Aspirations in  
Computing**  
National Runner-Up &  
Colorado Winner, 2016

## languages & technologies

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python		d3.js	
php		flask	
c		sql	
javascript		illustrator	