Kevin Sheng

(404) 314 7774
kevin.s.sheng@gmail.com
linkedin.com/in/ksheng-
github.com/ksheng-

New York, NY · **US Citizen**

Education

Degree **B.E. Electrical Engineering**, *The Cooper Union*, New York, NY, **GPA: 3.61**.
Expected May 2018

Honors Innovator's Scholarship, Half-Tuition Scholarship, National Merit Scholarship Winner

Coursework Machine Learning, Artificial Intelligence, Compilers, Operating Systems, Advanced Computer Architecture, Digital Signal Processing, FPGA Design, Electronics, Communication Theory, Communication Networks, Data Structures & Algorithms, Databases

Experience

2017-2018 **Cooper Union Formula SAE Team**, *Electronics System Lead*, New York, NY.
- Engineered electronic, sensor, and power systems for the FSAE Michigan 2018 racecar.

Summer 2017 **Lucera Financial Infrastructures**, *Software Engineering Intern*, New York, NY.
- Built a client facing foreign exchange analysis and visualization platform with D3.js and React.
- Designed a Python backend to fetch, cache and analyze data from a massive (on the order of billions of records) columnar database in a tractable amount of time.
- Implemented a machine learning algorithm using spectral clustering to generate LP groups with minimized bid-ask spread.

2016–2017 **Distributed Intelligent Agents Lab**, *Student Researcher*, New York, NY.
- Designed an intelligent traffic coordination algorithm that leverages both game theoretic and reinforcement learning approaches to minimize the effect of selfish routing on traffic flow.
- Demonstrated reduced congestion and average travel times in Python simulations, converging towards the social optimum in Braess' networks where the Nash equilibrium is non-optimal.

Summer 2016 **Kulite Semiconductor Products**, *Intern*, Leonia, NJ.
- Created an automated test stand for high performance pressure transducers, using MATLAB to rapidly adjust environmental parameters while minimizing measurement inaccuracies.
- Increased the throughput and resolution of data collection, successfully characterizing unexpected nonlinear effects at near vacuum pressure through data visualization.

Summer 2015 **OHSU Center for Spoken Language Understanding**, *Intern*, Portland, OR.
- Created a sensor synchronization system for audio and accelerometer data used to detect cerebral palsy in infants, using a Goertzel filter, modified STFT, and cross-correlation implemented in R to quickly and accurately find the time offset between datasets.

Projects

2017–Present **FRAME: Face Recognition with Augmented Mobile Eyewear**.
- Engineered glasses that identify faces, overlaying personal information using near-eye optics.
- Wrote a 30FPS real-time face tracking algorithm on a RPi 3 (Cortex A53) using a Viola-Jones detector and correlation tracker, leveraging SIMD extensions and OpenMP multithreading.
- Performed face recognition using a convolutional neural network on a remote ZMQ server.

2016–Present **Electronic Throttle Control**, *Formula SAE Michigan 2017*, Cooper Motorsports.
- Designed a drive-by-wire system that uses sensor data to optimally control throttle position.
- Modeled, simulated, and tuned a PID motor control system with Simulink, using dynamometer and track torque/power data in order to facilitate fast and smooth throttle response.
- Implemented in C on an STM32F4, an ARM Cortex M4 MCU, with a custom EAGLE PCB.

Spring 2017 **C Compiler**.
- Wrote a lexical analyzer and syntax parser for a subset of the C language, building an abstract syntax tree and generating a quads intermediate representation and target x86 assembly.

2015–2016 **Data Acquisition**, *Formula SAE Michigan 2016*, Cooper Motorsports.
- Created a sensor system to measure, store, and display vehicle performance data, implementing custom sensors and interfacing with existing engine sensors over CAN.

Skills

Languages C, C++, Python, MATLAB, Javascript (React.js, D3.js), HTML/CSS, SQL *Proficient*
Java, VHDL, Assembly (x86, MIPS), R, Bash *Familiar*

Software Unix, git, Simulink, Xilinx Vivado, EAGLE, LTSpice, Cadence Spectre, SolidWorks