

# Siddharth Challani

9 Keats Court, East Windsor, NJ 08520 | (609) 374-5289 | [schal@seas.upenn.edu](mailto:schal@seas.upenn.edu) | [www.linkedin.com/in/schal](http://www.linkedin.com/in/schal)

---

## Education

### UNIVERSITY OF PENNSYLVANIA | Vagelos Integrated Program in Energy Research (VIPER)

Cumulative GPA: 3.66/4.00, Dean's List 2017-2018

#### Bachelor of Science in Engineering (BSE) in Electrical Engineering (05/2019)

#### Bachelor of Arts (BA) in Mathematics, Minor in Computer Science (05/2019)

Selected courses: Computer Architecture, Embedded Systems, Digital Signal Processing, Circuit Design, Electromechanical Prototyping, Data Structures & Algorithms, Calculus III-IV, Linear & Abstract Algebra, Real & Complex Analysis, Probability

### FUDAN INTERNATIONAL SUMMER SESSION, SHANGHAI, CHINA (SUMMER 2018)

Received a Penn scholarship to study Chinese and development economics at Fudan University in Shanghai

## Skills & Abilities

### SELECT PROJECTS

- Self-balancing two-wheeled robot with accelerometer PID controller for position and velocity control (C, Assembly)
- Senior design: wearable medical device for opioid overdose detection and automatic treatment (Altium, C, Solidworks)
- Full portfolio: [www.seas.upenn.edu/~schal/works](http://www.seas.upenn.edu/~schal/works)

### TECHNICAL SKILLS

- *Hardware Design, Simulation & Testing*: Altium, LTSpice, CircuitLab, oscilloscope, DMM, signal generators
- *Programming*: C, Assembly, ARM programming, MATLAB, Java, Arduino, Python, OCaml, HTML/CSS/Javascript
- *Mechanical Modeling & Prototyping*: COMSOL, Solidworks, DraftSight, AutoCAD, laser cutting, 3D printing

### LANGUAGES

English (native), Hindi (native), Spanish (proficient), Mandarin Chinese (intermediate)

## Work Experience

### TEACHING ASSISTANT (TA) | ESE 292, University of Pennsylvania (08/2018-12/2018)

- Teach students to use Altium 18 (PCB layout, schematic capture) and Solidworks (CAD) for electromechanical design
- Design 4-layer PCB and mechanical casing for battery-powered headlamp, teach students to design, reflow, debug PCBs
- Conduct circuit design review, hold office hours, grade assignments, handle administrative aspects of the class

### COURSE DEVELOPER & HEAD TA | ESE 112, University of Pennsylvania (07/2017-PRESENT)

- Design lab section for new electrical engineering course replacing a core curriculum electromagnetics requirement
- Create, test, and debug lab experiments, write student assignments and TA handbook for teaching and grading
- Scale up to accommodate 50% increase in enrollment due to popularity after successful first semester
- Teach and grade labs, lead team of ~7 TAs, organize grading/office hours, manage course website, order materials

### UNDERGRADUATE RESEARCHER | MSMA Group, Singh Center for Nanotechnology (05/2016-06/2018)

- MEMS research to improve efficiency for fabrication processes for various projects in the lab
- Testing effects of internal nanostructures on flow rate in microfluidic devices
- Developing reusable seed layer process for fabrication of thin metal films, reducing time and cost of production
- Using COMSOL to conduct physics-based simulation (FEM) of microinductors to help develop new fabrication methods

## Leadership

- Residential advisor (RA) at Kings Court English College House, University of Pennsylvania (08/2017-present)
  - Build community by planning weekly events, mentor ~40 freshmen per year, serve as academic role model
- Director, Penn Lions Dance Troupe (04/2017-present)
  - Lead a ~25-member lion dance troupe; run practices twice a week, train members, choreograph routines
- Mentor, PEER Mentoring Program, University of Pennsylvania (08/2019-present)