Siddharth Challani

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

Education

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

Cumulative GPA: 3.67/4.00, Dean's List (2017-2018); Penn Engineering Exceptional Service Award (2019)

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 Algebra, Complex Analysis, Abstract Algebra I-II, Real Analysis I-II, Probability, Device Design, Solid-State Electronics & Energy Devices

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

Received a Penn scholarship to study Mandarin 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

TECHNICAL SKILLS

- *Hardware Design, Simulation & Testing*: Altium, LTSpice, COMSOL, oscilloscope, DMM, signal generators
- *Programming*: C, Assembly, ARM programming, MATLAB, Java, Arduino, Python, OCaml, HTML/CSS/Javascript
- *Mechanical Modeling & Prototyping*: 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 (FEA) to simulate high-frequency power loss in 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)