ARIEL V. SLEPYAN

P +1-516-304-2517 | E aslepya1@jhu.edu | L https://www.linkedin.com/in/ariel-slepyan-9b930812b

EDUCATION

JOHNS HOPKINS UNIVERSITY, 2020
B.S. IN BIOMEDICAL ENGINEERING

Bloomberg Scholarship Recipient

Concentration: Instrumentation, Medical Devices, and Micro/Nano Technology

Minor: Mathematics

TECHNICAL SKILLS

- **MICROFABRICATION SKILLS**

Photolithography, soft lithography, PDMS molding, thin film deposition, dry/wet etching, bonding, mask design

- **PROGRAMMING SKILLS**

Proficient in Python, Java, C, and MATLAB. Experienced with data science/machine learning in Python. Proficient with Arduino.

- **COMPUTER AIDED DESIGN**

Proficient in AutoCAD/Autodesk Inventor. Experienced with Solidworks. Computer simulation experience in COMSOL. Experienced in 3D Printing.

- **WET LAB SKILLS**

Agarose gel electrophoresis, DNA/RNA isolation, restriction enzyme digestion, polymerase chain reaction (PCR), RT-PCR, ELISA, bioinformatics programs (BLAST, ClustalW, Phylogenetic Analysis, ImageJ)

AWARDS

- Finalist for FastForward Summer Award ($10,000) to support point-of-care diagnostics venture (2019)
- Winner of Johns Hopkins Spark Grant to continue work on point-of-care diagnostics venture (2018)
- 2nd place overall winner at MedHacks 2017 and Winner of Wolfram & Contrary Capital Prize (2017)
- 2nd Place in Microbiology at Intel ISEF 2016 (Intel International Science and Engineering Fair)
- Intel ISEF Finalist 2015, 2016 (Intel International Science and Engineering Fair)
- 1st Place in Engineering (2016) and Materials Science (2015) at the New York State Science and Engineering Fair

BIO

A creative biomedical engineer experienced in microfabrication, microfluidics, robotics, wireless sensing, neuromorphic design, and python programming.

RESEARCH EXPERIENCE

SINAPSE Institute (Singapore Institute for Neurotechnology) (Summer 2019)

Researcher at the SINAPSE Institute at the National University of Singapore (NUS)

- Designed and built a biomimetic soft robotic finger for dexterous manipulation
- Developed a control system for delicate grasping of objects using two soft robotic fingers
- Designed and built a novel tactile sensor that is wireless, passive, neuromorphic, and scalable from RFID technology

IMEC (Interuniversity Microelectronics Center) (Summer 2018)

Visiting Research Scholar in Life Science Technology department at IMEC

- Built a microfluidic droplet sorting platform in a silicon microchip
- Redesigned photomask to improve chip performance and eliminate clogging
- Generated computer simulations of microfluidic droplet sorting in COMSOL

Johns Hopkins University – Nitish Thakor Lab (2019 – present)

Undergraduate Researcher in the Neuroengineering & Biomedical Instrumentation Lab

- Developing a novel tactile sensor that is wireless, passive, neuromorphic, and scalable from NFC technology

Johns Hopkins University – Jeff Wang Lab (2017 – 2019)

Undergraduate Researcher in the BioMEMS & Single Molecule Dynamics Lab

- Designed and built a droplet based microfluidic platform for measuring enzyme kinetics
- Designed and built a droplet based microfluidic platform for vacuum based loading
- Implemented MATLAB based system to control microfluidic valves during experimentation

LEADERSHIP AND TEACHING EXPERIENCE

Team leader of student venture PPOC4.me (2017 – present)

- Venture focuses on developing accessible paper based microfluidic diagnostic devices
- Presented at invitational Baltimore Innovation Week Science Conference 2017
- Member of TCO Lab's Hatchery Incubation Program (2017 - 2018)

Teaching Assistant for Biomedical Data Science Lab (EN.580.477) (Fall 2019)

- Conducted weekly lab sessions with ~40 students, held weekly office hours, graded assignments/provided feedback
- Topics covered: biomedical data processing (convolution, denoising, filtering, edge detection, template matching), biomedical data reduction (feature extraction, principal component analysis), biomedical data regression, classification, and clustering

WJHU Student Radio Executive Board Member – Tech Director (2017 – present)

- Built and setup online radio streaming platform for 24/7 broadcasting of WJHU
- Responsible for maintaining equipment and troubleshooting any technical issues with broadcasting

PUBLICATIONS AND PRESENTATIONS

A. Slepyan and N. Thakor '*Towards scalable soft e-skin* - Flexible event-based tactile sensors using wireless sensor elements embedded in soft elastomer'

- *Work in progress*

A. Slepyan *et al* 'A biomimetic soft finger for palpation applications'

- Published in conference proceedings of Do Good Robotics Symposium (DGRS) sponsored by IEEE Robotics & Automation Society (October 2019);
- Oral presentation at DGRS (October 2019)