KAIRAV K. MANIAR

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EDUCATION

Boston University • College of Engineering • Dean's List — Boston, MA

Bachelor of Science • Biomedical Engineering • Minor in Economics • Concentration in Technology Innovation — *Sep 2017 – May 2021*

Relevant Coursework

Device & Diagnostic Design	Solid Biomechanics	Molecular Bioengineering
Systems Physiology	Probability, Statistics, & Data Sciences	Thermodynamics & Statistical Mechanics

SELECTED PROJECTS

"Mechanotransduction of Cytoskeletal Forces" Senior Design Project — *Sep 2020 – May 2021*

- Coupling ECM stiffness-mediated protein translocation to traction force microscopy in airway muscle cells.
- Culture, stain, image cells and create precise polyacrylamide gels to quantify cytoskeletal/nucleic forces.
- Develop computational viscoelastic actin model to characterize mechanotransduction pathway.

"EOG Morse Code Detector" Project — *Sep – Dec 2019*

- Collaborated with team of 5 biomedical engineers to create Morse code translation device with 98% accuracy.
- Programmed device to track ocular movements using EOG signal filtration, LabView, Matlab.

WORK EXPERIENCE

Technology Innovation Scholars Program • *Inspiration Ambassador* — *Sep 2020 – Present*

- Tutor and mentor K-12 students on math, science, and engineering through virtual outreach programs.
- Develop new "Innovations in a Box" engineering challenges, pivoting for virtual accessibility.

Boston University Chen Lab • *Undergraduate Research Assistant* — *Jan 2020 – Present*

- BU UROP Student Research Award winning project.
- Construct optical (Zemax) and physical (CAD) design of focal plane units in novel multi-area two-photon microscope.
- Calculate aberration correction algorithm for adaptive optics, deformable mirrors to achieve cellular resolution.
- Modify image collection software in C++, Matlab to more accurately process and construct images.

LabCentral, Inc. • *Laboratory Operations Assistant* — *Jun – Dec 2019*

- Collaborated with scientists, executives, vendors, and sponsors at large-scale, early-stage biotech startup incubator.
- Optimized wetlab workflow, implemented operating protocols, and supported laboratory operations.

Boston University Brain & Vision Research Lab • *Undergraduate Research Assistant* — *Sep – Dec 2018*

- Reconfigured and programmed virtual psychophysical tests using PsychToolbox software package.
- Compiled and analyzed series of behavioral response data using Excel and Matlab.

Cleantech Open Northeast Start-Up Accelerator • *Aestus, Inc. Start-Up Intern* — *May – Sep 2018*

- Contributed to materials research, design optimization of prototype for novel waste heat recovery technology.
- Conducted market research, completed key deliverables/financial presentations to executives and investors.

SKILLS

Computer: Matlab, C++, Python, Swift, CAD (SolidWorks, AutoDesk Inventor), Adobe Creative Cloud, Microsoft Suite.
Laboratory: two-photon, fluorescent microscopy; spectroscopy; pipetting, sterile cell culture, staining, BL2 practices.
Languages: English (Native), Spanish (Conversational), and Gujarati (Conversational).

LEADERSHIP

Global Engineering Brigades, *President*
Biomedical Engineering Society, *Peer Mentor*
Mock Trial Organization, *Vice President and Captain*
Club Cross Country and Track Team, *Varsity Athlete*