JONATHAN KAJ

917-847-6502 | jjk359@cornell.edu | linkedin.com/in/jonathankaj

EDUCATION

Cornell University, Meinig School of Biomedical Engineering, Ithaca, NY — Expected May 2025
Master of Engineering, Biomedical Engineering
- Honors: Master of Engineering Committee Fellow
- 4.0 GPA

University at Buffalo, The State University of New York, Buffalo, NY — Aug. 2020 – May 2024
Bachelor of Science, Biomedical Engineering
- Honors: Summa Cum Laude

SKILLS

Technical: Six Sigma Blackbelt, SOLIDWORKS, Mesh Mixer, 3-Matic, Image J, Data Analysis, FFF & SLA printing, Cell Culture, Experimental Design, Image Processing, TinkerCAD, Regulatory Affairs, Microsoft Word, Microsoft Excel, Inventor.
Programming: MATLAB, R, Python, Arduino.

WORK EXPERIENCE

Research and Design Engineer Intern | The Jacobs Institute, Buffalo, NY — May 2024 – Aug. 2024
- Utilized SOLIDWORKS to design and evaluate twelve small vessel models, identifying the optimal support combination for 3D printing neurovascular models on a Stratasys J850 Digital Anatomy printer.
- Processed and assembled two highly detailed anatomical models of Arteriovenous Malformations (AVM) to aid clinicians and biomedical engineers in visualizing and analyzing AVM structures.
- Developed two clinically relevant AVM hybrid models using Mesh Mixer and 3-Matic software, connecting the complex AVM anatomy to brain anatomy, including the middle, posterior, and anterior cerebral arteries.

Research Fellow | Arany Lab, UB Department of Oral Biology, Buffalo, NY — Dec. 2022 – Aug. 2024
- Investigated the effects of Photobiomodulation and Radio Frequency therapies on epithelial and oral cancer stem cells using biochemical assays, light microscopy, and spectrophotometry.
- Led a project team of three students by mentoring them in experimental procedures, guiding proper lab documentation, and organizing regular meetings to track progress and align research goals.

Automation Engineer Intern | Novartis Pharmaceuticals, Hicksville, NY — May 2023 – Aug. 2023
- Optimized preventative maintenance system for eight production lines to improve efficiency and minimize downtime.
- Developed heat maps for two company facilities to visualize insect sightings, aiding in effective extermination procedures.
- Collaborated with validation engineers to conduct three temperature mapping studies and Waukesha pump qualification.

PROJECTS

Optimizing Colonic Decompression Procedures | Capstone Design Project — Aug. 2023 – May 2024
- Worked alongside two clinicians from Roswell Park to identify unmet needs in treating acute colonic distention and improve the current gold standard device, the Cook Medical 14 Fr Colonic Decompression Set.
- Designed two attachable advancements using SOLIDWORKS and Fusion 360, including a compatible rotating hemostatic valve for improved lubrication and a pigtail catheter for device anchorage.

ConPanion | Brain Machine Interface Design Challenge — March 2023 – May 2023
- Partnered with three peers to pitch a digital health system to support college athletes with monitoring concussion recovery.
- Presented proposed design of the digital health solution, tailored market, and achieved first place prize of $1500.

WalkRight | Principles of Biomedical Engineering — Aug. 2021 – Dec. 2021
- Coordinated a team of four to design a device to maintain an average walking pace to reduce freezing episodes and improve gait regularity for Parkinson's patients experiencing freezing of gait.
- Integrated laser projection as a visual cue for brain stimulation via external sensory input, facilitating movement.
- Drafted and 3D printed a cost-effective prototype compatible with various walking aids, resulting in a 95% reduction in production expenses compared to current alternatives.

LEADERSHIP

M. Eng. Student Ambassador, Cornell Engineering, Master of Engineering — Aug. 2024 – Present
Secretary, Biomedical Engineering Society Club Chapter, University at Buffalo — April 2023 – May 2024