

# Alexander Kyu

**P** 919-527-8552

**E** alexanderkyu@gmail.com

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## TECHNICAL EXPERIENCES

### UX Engineer at Bloomberg (MHCI Capstone) *Jan 2023 – Present*

- DESIGNED AND CONDUCTED INTERVIEWS AND USER RESEARCH ACTIVITIES WITH BLOOMBERG'S CUSTOMER SUPPORT
- FACILITATED BLOOMBERG STAKEHOLDER RELATIONS BETWEEN PRODUCT OWNERS AND UX RESEARCH AND DESIGN
- SYNTHESIZED AND PRESENTED RESEARCH TO VARIOUS BLOOMBERG STAKEHOLDERS TO BUILD EMPATHY WITH USERS WHILE PUSHING COMPANY GOALS
- DESIGNING NEW WORKFLOWS, SERVICES, AND SOFTWARE FOR BLOOMBERG CUSTOMER SUPPORT IN CONJUNCTION WITH PRODUCT MANAGERS, ENGINEERS, AND UX DESIGNERS

### Researcher at CMU SMASH Lab (Independent Study) *Jan 2023 – Present*

- EVALUATED PAST LITERATURE IN THE FIELD OF SENSING FOR HAND POSE ESTIMATION
- DESIGNED AND IMPLEMENTING A SYSTEM TO CAPTURE SENSOR DATA AND HAND POSE DATA USING EIT AND COMPUTER VISION
- DEVELOPING ML PIPELINE FOR OFFLINE AND ONLINE TRAINING AND HAND POSE ESTIMATION

### Biomedical Researcher at CMU (WHT Class) *Jan 2023 – May 2023*

- EVALUATED PAST LITERATURE IN THE FIELD OF JOINT KINEMATICS AND POSE TRACKING IN NATURAL ENVIRONMENTS, STATE-ESTIMATION FILTERS, AND BIOMECHANICAL MODELLING
- DEVELOPED AND EXECUTED EXPERIMENTAL PROTOCOL TO CAPTURE A VARIETY OF HUMAN MOVEMENTS AND JOINT KINEMATICS
- IMPLEMENTED AND EVALUATED XSSENS IMUS ACROSS MULTIPLE STATE-ESTIMATION FILTERS WITH AND WITHOUT BIOMECHANICAL MODELLING (OPENSENSE)

### Software Engineer at Intuitive Surgical *May 2022 – Aug 2022*

- DESIGNED AND IMPROVED AUTOMATED TESTING EFFORTS FOR LANGUAGE SUPPORT
- AUTOMATED DATABASE TESTING THROUGH UI INTERACTIONS
- INTEGRATED MOVING 3D MODEL OF ROBOTIC SYSTEM USING REACT INTO AN INTERNAL DEVELOPMENT TOOL
- EXECUTED SOFTWARE PROTOCOLS TO ENSURE THE QUALITY OF ISI'S ROBOTICS FOR FDA REGULATORY APPROVAL

### Product Development Engineer at Asensus Surgical *May 2021–Aug 2021*

- DESIGNED AND EVALUATED ADAPTERS TO CREATE COMPATIBILITY BETWEEN THIRD-PARTY ENDOSCOPES AND THE SENHANCE SURGICAL ROBOT
- DESIGNED AND EVALUATED SURGICAL ROBOTIC FIXTURES USING SOLIDWORKS
- EVALUATED VARIOUS ERGONOMICS TO IMPROVE THE DESIGN OF THE SURGEON INTERFACE
- DEVELOPED SEVERAL TEST VERIFICATION PROTOCOLS FOR STERILE DRAPE COMPATIBILITY
- UPGRADED SURGEON SIMULATORS TO INCREASE COMPATIBILITY BETWEEN THE SIMULATOR AND UPDATED SOFTWARE ON NEWER SURGICAL SYSTEMS

### President of Pack Bionics Team at NCSU *Aug 2018 – May 2022*

- MANAGED RELATIONS BETWEEN FACULTY, PROFESSORS, AND TEAM MEMBERS
- PLANNED AND TAUGHT VARIOUS TOPICS TO NEWER TEAM MEMBERS
- EVALUATED USABILITY OF SENSORS AND ELECTRONIC COMPONENTS FOR PROSTHETICS
- PREPARED A SCHEMATIC, DESIGNED A PCB, AND ENSURED MANUFACTURING REQUIREMENTS
- DESIGNED AND IMPLEMENTED THE SOFTWARE CONTROLS AND LOGIC OF THE PROSTHETIC

## EDUCATION

### Carnegie Mellon University

Master of Human-Computer Interaction  
Aug 2022 – Aug 2023  
GPA 4.0/4.0  
Pittsburgh, PA

### North Carolina State University and University of North Carolina at Chapel Hill

B.S. in Biomedical and Health Sciences  
Engineering  
Minor in Computer Programming  
Aug 2017 – May 2022  
GPA 4.0/4.0  
Raleigh, NC

### Zhejiang University

Study Abroad – China: Engineering, STS,  
and International Studies  
Summer 2018  
Hangzhou, China

## KEY SKILLS

- JAVA, MATLAB, C & C++, PYTHON, JS, REACT, UNITY
- REST API'S, NO SQL AND SQL DB'S
- SCHEMATIC/PCB DESIGN
- GITHUB, BITBUCKET, SVN VERSION CONTROL
- QUALITY MANAGEMENT SYSTEMS LIKE AGILE, MKS INEGRITY, POLARION, ARENA, AND JAMA
- SOLIDWORKS, 3D MODELING

## RELEVANT COURSEWORK

- WEARABLE HEALTH TECHNOLOGIES
- SMASH LAB - INDEPENDENT STUDY WITH DR. MAYANK GOEL
- BIOINSTRUMENTATION
- BIOCONTROLS
- BIOMEDICAL SIGNAL PROCESSING
- REHABILITATION ROBOTICS
- NEURAL NETWORKS
- DATA STRUCTURES AND ALGORITHMS
- OPERATING SYSTEMS
- COMPUTER VISION
- USER-CENTERED RESEARCH AND EVALUATION
- PROGRAMMABLE USER INTERFACES
- MACHINE LEARNING AND SENSING