

# Sanjit Singh

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I am a highly organized and motivated student of computer science with a passion for technology. I am experienced in AR & VR cross platform applications development (Android, IOS). I have the skills and experience to conceptualize, build, test, and deliver. I am seeking an employment opportunity to increase my knowledge and skills level while contributing to the goals of an organization.

## **SKILLS**

**Programming Languages:** Java, C#, XML, HTML, CSS, Python, JSON, Swift, JavaScript, C/C++

**Hardware:** Arduino, Oculus Rift, Leap Motion, Microsoft Kinect, Smart Glasses

**Platforms:** Unity3D, Eclipse, Android Studio, Android of Things, Visual Studio, Photoshop, Arduino IDE, Oculus Rift, Google Cardboard, BT-200, Microsoft Kinect

**Tools/Technologies:** Augmented Reality, Virtual Reality, Vuforia, OpenCV, Game Development, Game Design

## **EDUCATION**

Rutgers University, New Brunswick, NJ

September 2020 – May 2022

Bachelor of Science in Computer Science

New Jersey Institute of Technology, Newark, NJ

September 2019 – May 2020

Transferred to Rutgers University - New Brunswick.

Mercer County Community College, West Windsor, NJ

Graduated May 2019

Associates of Science in Computer Science

Recognized in school article: [http://www.mccc.edu/news/2019/general/Olu\\_Sanjit\\_Internships.shtml](http://www.mccc.edu/news/2019/general/Olu_Sanjit_Internships.shtml)

## **WORK EXPERIENCE**

NASA SUITS Augmented Reality Challenge

January 2021 - Present

*Project Team Leader*

- Was selected as one of the top 20 national teams to compete in the competition
- Goal of this challenge is to develop AR user interface system for Microsoft HoloLens 2 device to help astronauts going on Lunar Exploration by the year 2024

XBoost

*Co-founder & Vice President*

February 2020 – Present

Early-stage Biotechnology startup funded by National Science Foundation I-Corps program

<https://exoboost.github.io/>

New Jersey Institute of Technology

August 2019 – September 2020

## *Research Assistant @ Biodynamics & MIXR Lab*

### **Biodynamics Lab**

- Conducted research in the Department of Biomedical Engineering towards Virtual Rehabilitation Therapy
- Utilized Arduino Micro-controller, IMU sensors and myoware sensor devices all towards robotic exoskeleton arm for neurological patients with Cerebral Palsy that require neuromuscular support
- Interfaced robotic arm through Arduino to Unity3D to serve as a wearable controller for video games

The Biodynamics Lab was selected by NSF I-Corps program with a funding of \$2,000 to conduct research & development that could be potentially commercialized into a startup that develops core technologies, robotic devices & interactive games for therapeutic clinics. Taking all the work conducted in the research lab to XBoost MIXR Lab

August 2019 – January 2020

- Conducted research in the Department of Computer Science & Informatics towards military medicine
- Utilized Machine Learning & Computer Vision Library into Unity3D to detect accurate pose estimation
- Utilized Azure Kinect DK for motion tracking, calculating body joints, 3D mesh scanning and point cloud visualizations
- Ultimate goal was establish a tool for Microsoft HoloLens 2 that can help paramedics & surgeons treat Injured soldiers shot on the ground-based off of accurate pose position, mesh scanning through point cloud visualizations and overlaying holographic projection of 3D human muscle skeleton model onto a human body of injured soldier

## Enable Games / Drexel University Spin off startup@ Replay Laboratory

May 2018 – June 2020

### *Game Developer & Researcher*

- Developed projects using Unity3D to enhance physical therapy for patients who have Cerebral Palsy, Parkinson's, and other neurological conditions
- Built custom asset library to integrate the use of Xbox Kinect to enable motion tracking in the use of physical therapy activities
- Implemented use of Stykz, a motion capture studio software to take real life motions and turn them into animations into games and further exporting all movements and motion tracking input into RAW data using JSON
- Reviewed roles in clinical trials for usability purposes with patients. Analyzing inputs and gathering more clinical data between interaction of the patients through the games and recording their progress through our platform

## Weill Cornell Medicine / Cornell Medical School

April 2019 – June 2019

### *Research Assistant*

- Worked in engineering sub-team researching the integration between 3D segmented heart models derived from CAT scans and fluoroscopic images
- Utilizing 3D models & AR Visualizations to minimize error on syncing both CAT scans and fluoroscopic images for catheter approximation during cardiovascular Interventions
- Worked on improving thickening of blood volume of 3D Segmented CAD Models using Rhino 3D & Geomagic Wrap to test into Microsoft HoloLens for visualizing detection of catheter accuracy to better assist Interventional cardiologist

## **HACKATHON PROJECTS**

### **OperatAR**

Dec 2017 - Present

An app that teaches users how to perform surgery and how to give clear directions in an operation room through Augmented Reality. The app was built using Unity3D, C#, Vuforia and Android Studio integrated through Google Cloud using speech to text API.

### **CerebralPalsyVR**

Nov 2017 – Nov 2017

A series of VR-based games that help rehabilitate cerebral palsy patients who are partially able to move their feet and/or hands. The patient uses an Oculus Rift headset with Arduino sensors attached to their legs and hands. I worked extensively on the implementation of the main menu, UI, VR input. Also helped develop certain movements that our VR game could use to help cerebral palsy patients. Worked on backend with Android Studio to use the gyroscope tool for our balance measurements with mobile Android devices serving as the sensors of physical motion.

## **AWARDS/HONOR**

### **Amazon Web Services - Best Use of AWS**

HackRU Fall 2017

Developed a machine learning program that can diagnose Diabetes based on the information that patients provide to Amazon Alexa through a series of questions.

### **Top 30 Hack**

PennApps Fall 2018

Developed a social media app using Facial Recognition to help others get to know each person faster. The app scans their face and through the datasets display their name and stores the exact day, time, and location where they met.

### **NSF I-Corps Grant Recipient**

National Science Foundation Innovation Corps Spring 2020

\$2,000 grant awarded to "teams interested in exploring the commercial viability of their ideas for products and businesses that are based on their own inventions.

### **MIT COVID-19 Challenge Winner**

MIT COVID-19 Challenge Spring 2020

Came up with a program that can-do questionnaire testing and then based on answers get a sample test kit sent home. Once that test kit is sent back to clinical labs, they can use Machine Learning Algorithms to conduct antibody testing to accurately diagnose if the patient has Coronavirus or not.