

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
Bachelor of Science in Computer Science

Graduation May 2022

WORK EXPERIENCE

Semblance

March 2020 – Present

Mobile Application Developer

- Early stage health & fitness startup where I am working as an Augmented reality app developer for IOS & Android Platforms
- Utilizing Virtual 3D Avatar SDK in order to real-time capture user's face and body scans and process that 2D image into a real-time 3D model of the actual user

XBoost

Co-founder & CTO

February 2020 – Present

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

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

New Jersey Institute of Technology

Research Assistant @ Biodynamics & MIXR Lab

August 2019 – September 2020

Biodynamics Lab

- Currently conducting research in the Department of Biomedical Engineering towards Virtual Rehabilitation Therapy
- Utilizing Arduino Micro-controller, IMU sensors and myoware sensor devices all towards robotic exoskeleton arm for neurological patients with Cerebral Palsy that require neuromuscular support
- Interfacing 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 to 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

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.