

# GUNNAR NELSON

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## EXPERIENCE

### **LEAD SOFTWARE ENGINEER-CROSS PLATFORM APP ENGINEER**

NERVE+INC-SAN FRANCISCO, CA | AUGUST 2021- PRESENT

- Focus on cross platform application development for gaming consoles with modeled CAD designs, to fit for the Oculus, iOS, Android Xbox, Steam, Windows, and Playstation
- Responsible for integration of cross platform and regualtion to create a seamflow process and different integration of C Code developed gaming, react native cross platform integration, and 3D environemnt creation
- Project lead for XMARCUS and FUGUPOS for remote robotic surgery training and protein data bank augmentation for interface interaction

### **LEAD SOFTWARE ENGINEER-IOS**

VAROS-WASHINGTON, DC| MARCH 2021- JULY 2021

- Responsible for high scale team development of technical solutions and integration of AR/VR development based on CAD designed anatomy to aid in patient education
- Lead successful launch of VAROS App
- Presented work at Society of American Gastrointesntial & Endoscopic Surgery
- Published in the Journal of Surgical Endoscopy

### **AI SOFTWARE ENGINEERING RESEARCHER**

COMMONWEALTH CYBER INITATIVE-WASHINGTON, DC | MARCH 2021- JULY 2021

- Responsible for integrating Augmented Reality Design into the Microsoft Hololens 2
- Developed lead iPhone IOS application-Virtual & Augmented Reality Organ Systems (VAROS)
- Supervised and educate colleagues on the basis of Raspberry Pi development, Linux/Unix OS, and lead on projects

### **PEPPER ROBOTICS-SOFTWARE LEAD-ANDROID OS**

MIND MUSIC MACHINE LAB-BLACKSBURG, VA | AUG 2020- MAY 2021

- Lead two research projects on human-emotive robot interaction and the Mind Music Machine Lab's Robot Theater Elementary school program
- Developed custom movements in Kotlin and Java based Android libraries, with 135 Pepper robot movements
- Supervised undergraduate students in coding robot programs
- Taught students python fundamentals and drag-and-drop preset programs for Softbank's Pepper R
- Managed equipment for Softbank's Pepper and Nao humanoid robots

### **FLUTTER-REACT NATIVE-SQL SOFTWARE ENGINEER**

IMAWARE, HOUSTON, TX | JAN 2020- MAY 2020

- Construct React-Native based App in JavaScript for IOS/Android platforms, for transactions between users
- Perform SQL queries on PostGRESQL

### **SOFTWARE ENGINEERING RESEARCHER**

CYBERBIOSECURITY INITATIVE-VIRGINIA TECH-BLACKSBURG, VA | AUG 2019-DEC 2019

- Construct TensorFlow based classifier, and creating datasets from scratch, to distinguish between third world country fishing boats and countries patrol boats to minimize cases of piracy, using the MobileNet CNN architecture to be applicable for Android devices.

## EDUCATION

### **MASTER'S DEGREE (MS) COMPUTER SCIENCE &**

**APPLICATIONS 2020-2022**

VIRGINIA TECH COLLEGE OF ENGINEERING

GPA: 3.75

### **BACHELOR OF SCIENCE (BS) BIOCHEMISTRY MINOR**

**COMPUTER SCIENCE 2015-2019**

VIRGINIA TECH COLLEGE OF SCIENCE

## PUBLICATIONS & PRESENTATIONS

- **IDENTIFYING CURRICULUM GAP IN FUNDAMENTALS OF ROBOTIC SURGERY AND FUNDAMENTAL SKILLS OF ROBOTIC SURGERY: HANDLING ADVERSE EVENTS**  
JOURNAL OF SURGICAL ENDOSCOPY | APRIL 2018  
WORLD CONGRESS OF ENDOSCOPIC SURGERY
- **LAPAROSCOPIC RELEASE OF MEDIAN ARCUATE LIGAMENT**  
JOURNAL OF SURGICAL ENDOSCOPY | APRIL 2019  
SOCIETY OF AMERICAN GASTROINTESTINAL & ENDOSCOPIC SURGEONS
- **MINIMIZING ROBOTIC SURGERY ADVERSE EVENTS THROUGH MACHINE LEARNING**  
JOURNAL OF SURGICAL ENDOSCOPY | MARCH 2021  
JAPANESE SOCIETY OF ENDOSCOPIC SURGERY/WORLD CONGRESS OF ENDOSCOPIC SURGERY
- **ACM WORKS OF WONDER SHOWCASE-A PARADIGM SHIFT IN MEMORIALIZATION: LEARNING AND ENGAGEMENT THROUGH 3D VIRTUAL MUSEUMS**  
LIBERATION WAR MUSEUM BANGLADESH-MARCH 2021
- **REDEFINING THE DIGITAL PARADIGM FOR MUSEUMS-CONSIDERING THE COVID-19 PANDEMIC**  
LECTURE NOTES IN COMPUTER SCIENCE (LNCS) | JULY 2021  
INTERNATIONAL CONFERENCE ON HUMAN-COMPUTER INTERACTION
- **KNOWLEDGE IS POWER: LINKING AUGMENTED-REALITY WITH 3D PRINTED INTERNAL ORGANS TO IMPROVE MEDICAL EDUCATION AND INCREASE PATIENT INVOLVEMENT IN CLINICAL STUDIES:**  
JOURNAL OF SURGICAL ENDOSCOPY | AUGUST 2021  
SOCIETY OF AMERICAN GASTROINTESTINAL & ENDOSCOPIC SURGEONS

## VOLUNTEERING

### **STEM CLASSROOM ASSISTANT**

PRICES FORK ELEMENTARY-BLACKSBURG, VA | AUG 2020- PRESENT

- Teaching 3rd-5th graders about robotics and AI fundamentals.
- My mission is to inspire

### **ALLIED MEMBER**

BLACK IN AI | JAN 2021- PRESENT

- Organize and host monthly zoom session to discuss issues on system racism and provide an inclusive community to technology

### **ALLIED HEALTH MEMBER**

SOCIETY OF AMERICAN GASTROINTESTINAL AND ENDOSCOPIC SURGEONS (SAGES) | JAN 2021- PRESENT

- Mentor high school students with advice for pre-medical studies and aid in SAGES' Mini Medical School Bootcamp

## SKILLS

- Computer Vision
- Machine Learning
- Human-Robot Interaction
- Human-Computer Interaction
- Tensor flow
- Scikit learn
- Python
- Java
- Javascript Packages
- HTML
- CSS
- Frontend development
- React Native
- Node JS
- Android Library Packages
- IOS Libraries
- Unity Development
- Research
- Mentorship
- Outreach
- Entrepreneurship
- Team Building
- Teaching
- Robotics
- Linux OS
- Microsoft Office
- Operating Systems
- Swift
- APIs

## LINKS TO PORTFOLIO OF WORK



LINKED-IN



WEBSITE



GITHUB



GOOGLE  
SCHOLAR



TWITTER