

GUNNAR NELSON

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EDUCATION

MASTER'S DEGREE (MS) COMPUTER SCIENCE & APPLICATIONS 2020-2022

VIRGINIA TECH COLLEGE OF ENGINEERING

THESIS: XMARCUS-A PATHWAY TOWARDS REMOTE

ROBOTIC SURGICAL TRAINING

GPA: 3.75

BACHELOR OF SCIENCE (BS) BIOCHEMISTRY MINOR

COMPUTER SCIENCE 2015-2019

VIRGINIA TECH COLLEGE OF SCIENCE

EXPERIENCE

LEAD SOFTWARE ENGINEER

NERVE+INC-SAN FRANCISCO, CA | AUGUST 2021-JUNE 2022

- Performed instance segmentation for 5 ML models to be tested and refined for public domain and crowdsource annotation. Responsible for integration of cross platform and regualtion to create a seamflow process and different integration of C Code developed gaming, cross platform integration, and 3D environment creation.
- Worked on 3D VR environment augmenteation for pharamcutical data analysis and Human-AI interaction workflow environmentbuilt with Unreal Engine 5.0

LEAD SOFTWARE ENGINEER-IOS

VAROS-WASHINGTON, DC| JAN 2021- DEC 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
- Tech stack: Blender, Unity, Apple Reality Converter, and Apple API AR integration

AI SOFTWARE ENGINEER RESEARCHER

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

- Responsible for integrating Augmented Reality Design into the Microsoft Hololens 2
- perform configurations of Hidden Markov Models for public domain data for third part applications
- 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

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 Koltin and Java based Android libraries, with 135 Pepper robot movements
- Performed Computer Visiona dn Audiotoriy tasks for Human-Robot Emotion
- 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 robotics equipment

FLUTTER-REACT NATIVE-SQL SOFTWARE ENGINEER

IMAWARE, HOUSTON, TX | JAN 2020- JULY 2020

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

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.

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

- VR/AR
- Human-Robot Interaction
- Human-Computer Interaction
- AI
- Machine Learning
- Tensor flow
- Scikit learn
- Python
- Java
- Javascript
- 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



GOOGLE SCHOLAR



WEBSITE



THESIS:
XMARCUS



GITHUB



TWITTER