

GUNNAR NELSON

GUNNARBNELSON.COM

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EXPERIENCE

GRADUATE TEACHING ASSISTANT

VIRGINIA TECH-BLACKSBURG, VA | AUGUST 2021- PRESENT

- Graduate Teaching Assistant for CS 5040/CS3114: Intermediate Algorithms & Data structures
- Provide teaching on hybrid platforms
- Aided students through java development in abstract concepts to concrete coding

AI 5G RESEARCHER INTERN

COMMONWEALTH CYBER INITIATIVE | 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

GRADUATE TEACHING ASSISTANT

VIRGINIA TECH-BLACKSBURG, VA | JAN 2021- MAY 2021

- Graduate Teaching Assistant for graduate cybersecurity class
- CS Systems and Software Security 5590 under Dr Matthew Hicks
- Managed large class sizes during COVID 19
- Mitigate teaching on virtual platform

GRADUATE RESEARCH ASSISTANT

MIND MUSIC MACHINE LAB | 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
- 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

RESEARCHER

CYBERBIOSECURITY INITIATIVE-VIRGINIA TECH-BLACKSBURG, VA | JAN 2020- MAY 2020

- Research and handpick case studies datasets using IEEEExplore, AMC Database, and Google Scholar
- Focus on military supply chain utilizing convolution neural networks to fit and improve dataset for recognizing maritime imagery in the visible and infrared spectrum
- 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.

UNDERGRADUATE RESEARCHER

SYNERGY LAB-VIRGINIA TECH-BLACKSBURG, VA | AUG 2019-DEC 2019

- Aid in construction of python-based U-NET convolution neural networks,
- Applied machine learning techniques in Tensorflow/Scikit-Learn, and converting sinograms to CT images for low cost CT-imaging

EDUCATION

MASTER'S DEGREE (MS) COMPUTER SCIENCE &

APPLICATIONS 2020-2022

VIRGINIA TECH COLLEGE OF ENGINEERING

GPA: 3.61

BACHELOR OF SCIENCE (BS) BIOCHEMISTRY-

BIOLOGICAL SCIENCES 2015-2020

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
- Deep Learning
- Tensor flow
- Scikit learn
- Python
- Java
- Javascript
- HTML
- CSS
- Frontend development
- React Native
- Node JS
- Unity Development
- Research
- Mentorship
- Outreach
- Entrepreneurship
- Team Building
- Teaching
- Robotics
- Linux OS
- Microsoft Office
- Operating Systems
- Mac OS
- Data Structures
- Algorithm development and theory

LINKS TO PORTFOLIO OF WORK



LINKED-IN



WEBSITE



GITHUB



GOOGLE
SCHOLAR



TWITTER