Akash R. Karri

Interested Air Force Biomedical Engineer

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Second-year undergraduate who is passionate about emerging technologies in biology and medicine, specifically those related to aerospace. Pursuing an undergraduate degree in Mechanical Engineering and completing pre-medical requisites. Eager to use my skills for in cutting-edge biomedical technology to curate and improve medical practices in large organizations.

EDUCATION

North Carolina State University
Mechanical Engineering and Pre-Medical

2019 - Present

Relevant Courses

- Statics
- Engineering Physics I & II
- Organic Chemistry I & II
- Graphic Communications
- Engineering Statistics

North Carolina School of Science and Mathematics
High School

2017 - 2019

Relevant Courses

- AP (Chemistry, Biology, Computer Science)
- Biochemistry
- Multivariable Calculus
- Senior Research

RESEARCH EXPERIENCE

Summer Interdisciplinary Research Initiative Intern
NC State University: Cruse Lab

02/2020 - Present

Achievements/Tasks

- Project include testing effectiveness of nebulized RNA-i drug against asthma symptoms in a mouse model; assist in similar project against pulmonary fibrosis
- Led development of mouse-holding apparatus to ensure nebulized drug would reach peripheral areas of mouse lungs
- Proposed and lead new research initiative developing a Neural Network based tool to identify and locate specific white blood cells in various specialty stains to alleviate pathology-related research bottlenecks

Neuroscience Research Internship
Duke University: Gong Lab

06/2018 - 02/2019

Achievements/Tasks

- Collaborated with other researchers to train/test a 3D Convolutional Neural Network to segment active neurons from 1-photon calcium-imaging videos of in-vivo mice brains
- Gave 10 minute oral presentation and poster presentation at multiple research symposiums

SKILLS

Python | MATLAB | Java | R | SolidWorks | Arduino | Machine Learning | Computer Vision | Data Processing | Data Visualization | ImageJ | Wet Lab Procedures | Live Animal Handling | 3D Printing | Tableau | Microsoft Office | GSuite

PROJECTS

NASA Space Apps COVID-19 Challenge Project (2020)

- Creating machine learning algorithms to predict increases in COVID cases in major European cities based on Google Mobility data and pollutant concentration detected via satellite and ground stations
- Working with lead members of the Space Generation Advisory Council's Space Medicine and Life Sciences team and Team Novidien from the NASA Space Apps COVID-19 Challenge to collect and curate data, analyze data, and publish our findings

Type of Red Blood Cell Identifier (2020)

- Developing a faster and more accurate neural-network-based Red Blood Cell identification and localization system for bright-field microscopy images. Collaborating with the researchers/creators of the "IdentiCyte" software from Monash University in Melbourne, Australia

Licence Plate Reader (2020)

- Developed machine-learning-based license plate detection/reader system that connects to personal security cameras and mimics accuracy of Law Enforcement license plate recognition systems

Improved Cosmic Radiation Protection Suit (2019)

- Lead team to design novel design of radiation suits for deep-space missions that were more flexible, more protective, and more comfortable than current NASA design
- Presented at NASA Langley and Kennedy Space Centers
- Conrad Challenge & NASA HUNCH International Finalist

Non-invasive in-vivo Glucose Concentration Monitoring System Proposal (2019)

- Designed pulse-oximeter-like technology using mid-infrared light to find the absorption of glucose at specific absorption peaks and then relate raw data to glucose concentrations

Exercise Harness for Orion Space Capsule (2018)

- Lead team to design exercise harness with single-point attachment compatible with NASA's HULK exercise system
- Presented at NASA Langley, Johnson, and Kennedy Space Centers
- Conrad Challenge & NASA HUNCH International Finalist