

Keshara Weerasinghe

Curriculum Vitae

✉ cjh9fw@virginia.edu

🌐 Website

🐙 GitHub

🌐 LinkedIn

📄 Full Resume

WORK EXPERIENCE (SELECTED)

CURRENT, FROM AUG 2022 (FT)

University of Virginia

Research Assistant, Teaching Assistant

During this time, I am working on fine-grained human action recognition for robot-assisted surgery, cognitive assistant systems for emergency responders on resource-constrained edge devices, and open-source multimodal datasets for skilled activities. These works have been published on **ICRA, IoTDI in CPS-IoT week of 2024**.

SEP 2021 – DEC 2022 (PT)

University of Peradeniya

Research Assistant

This position involved developing an anomaly detection system for injection molding using computer vision, enabling real-time safety monitoring in industrial automation. This system has been deployed in Mona Exports pvt ltd in Sri Lanka and is functioning to this date.

MAR 2021 – SEP 2021 (FT)

99X

Intern Software Engineer

In this internship I worked on internationalization frameworks, authentication integration, localization management APIs, performance monitoring, static code analysis with CI/CD pipelines, private registry deployments, and API integrations for status management portals.

PUBLICATIONS (SELECTED)

Weerasinghe, K., Janapati, S., Ge, X., Kim, S., Iyer, S., Stankovic, J. A., & Alemzadeh, H. (2024) **Real-Time Multimodal Cognitive Assistant for EMS**, in 9th **ACM/IEEE IoTDI** Conference on Internet of Things Design and Implementation at CPS-IoT Week, Hong Kong

Weerasinghe, K., Roodabeh, S. H. R., Hutchinson, K., & Alemzadeh, H. (2024) **Multimodal Transformers for Real-Time Surgical Activity Prediction**, in 2024 IEEE International Conference on Robotics and Automation **ICRA**, Yokohama, Japan,

Weerasinghe, K., Tennakoon, S. C., Kularatne, K. N. U., Nawinne, I., Ragel, R., & Jayakody, H. (2021) **Using Near-Infrared Spectroscopy for Vein Visualization**, In **IEEE ICLaFS** 10th International Conference on Information and Automation for Sustainability

AWARDS (SELECTED)

2024 **Runner-up: Best Research Poster**
ECE Research Poster, University of Virginia

2021 **Best Research Article**
EscaPe, University of Peradeniya

2021 **Best Project: Covid-19 ICU RPMS**
SLASSCOM Ingenuity Awards 2021

2019 **Winner: Agriculture Category**
ACES Hackathon

EDUCATION

CURRENT **PhD Computer Engineering**

ADVISOR: HOMA ALEMZADEH

GPA: 3.81

University of Virginia

2016-2021 **BSc Computer Engineering**

GPA: 3.70

University of Peradeniya

REFERENCES

NAME **Dr. Homa Alemzadeh**

EMPLOYER *University of Virginia*

NAME **Prof. Roshan Ragel**

EMPLOYER *University of Peradeniya*

SERVICES (SELECTED)

2024 **Voluntary Mentor**
Senior Capstone Project
Charlottesville High School

2024 **External Reviewer**
ICCPs 2025, IEEE S&P 2025, ICRA 2025

2021 **Voluntary Developer**
Covid-19 ICU Patient Monitoring System

PROJECTS (SELECTED)

Data Collection System for Emergency Medical Services – Ongoing Research

Developed a unified software and hardware platform for recording surgical robot video, surgeon hand, and foot movements synchronously utilizing devices such as BlackMagic SDI recorders, TrakStar electromagnetic location tracking devices, and SDKs.

Context-Aware Augmented Reality for Cognitive Assistance in EMS – Ongoing Research

Developing a context-aware AR cognitive assistant system for cooperative situational awareness in medical emergencies utilizing a multimodal action recognition model optimized for resource-constrained devices achieving SOTA performance.

COVID-19 Real-time ICU Patient Monitoring System | Voluntary Project

Designed and implemented a real-time remote ICU monitoring system within 3 days, enabling centralized monitoring of patient vitals to reduce health personnel's exposure risk by 80% and increase the efficiency of monitoring by 75%.