

# HASHAN DANANJAYA FERNANDO

DATA SCIENCE AND ENGINEERING GRADUATE STUDENT  
UNIVERSITY OF TENNESSEE, KNOXVILLE

## PERSONAL INFORMATION

### Nationality

Sri Lankan

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### LinkedIn

<https://www.linkedin.com/in/hashandananjaya1/>

### GitHub

<https://github.com/hashansl>

## OBJECTIVE

To enhance the knowledge in Data Science and effectively utilize it for research and development.

## PERSONAL PROFILE

I am a graduate student with a strong background in Statistics, Operations Research, and Computer Science, with a focus on Data Science, Epidemiology, and Big Data. As a proactive and creative researcher, I am passionate about applying advanced methodologies such as Topological Data Analysis and Machine Learning to tackle complex public health challenges.

## EDUCATION

### DATA SCIENCE AND ENGINEERING PHD | READING

The Bredezen Center, The University of Tennessee, Knoxville, United States

Current GPA: 4.00/4.00

### MASTER OF SCIENCE (M.SC.) IN DATA SCIENCE

Postgraduate Institute of Science, University of Peradeniya, Sri Lanka

Final GPA: 3.75/4.00 (Merit Scholarship Awarded)

### B.SC. IN STATISTICS AND OPERATIONS RESEARCH

Faculty of Science, University of Peradeniya, Sri Lanka

Subjects: Statistics, Computer Science, and Mathematics

Final GPA: 3.06/4.00

## RESEARCH EXPERIENCE

### ● PhD Research - Geospatial Study of Opioid Overdose Risk in USA

I am currently engaged in research focused on leveraging advanced Machine Learning techniques and Topological Data Analysis to predict opioid overdose risk across various regions in the United States. In addition, I am developing new spatial-temporal methodologies to more accurately identify future high-risk areas.

### ● AHEAD Innovation Commercialization Enhancement grants - "Tampering and Sound Based IoT Framework for Real-Time Thermo-Mechanically Treated Steel Cargo Theft Detection"

In this study, machine learning techniques and low powered IoT devices were used to identify real-time theft detection.

#### ● Smart Seal

Developed a smart seal using ESP8266 for steel-based cargo protection. This device is almost ready to commercialize.

#### ● Audio Detection System

The audio detection system detects the theft with the help of Raspberry Pi and convolution neural networks (CNN).

## TECHNICAL SKILLS

### Programming Languages

C, Java, Python, R

### Libraries

Keras, Tensorflow, PyTorch,  
Numpy, Scipy, Scikit-learn

### Technology Stack

RStudio, MINITAB, SPSS, Weka,  
Google Cloud IoT, Arduino,  
Raspberry Pi technologies

## PROFESSIONAL APPOINTMENTS

- Working as a Research Assistant in the Oak Ridge National Laboratory, Tennessee, United States. (2022 to present)
- Worked as a Research Assistant in the Faculty of Science, University of Peradeniya, Sri Lanka. (December 2019 to 2022)
- Worked as a Data Scientist (Intern) in VizuaMatix, Nawala, Sri Lanka. (January 2019 to December 2019)
- Worked as a Planning Intern in MAS Active Linea Intimo, Biyagama, Sri Lanka. (October 2018 to January 2019)

## PRESENTATIONS

- A Geospatial Study of Opioid Overdose Risk in Washington D.C Metropolitan Area Interdisciplinary Association for Population Health Science 2024 (St. Louis)
- A Geospatial Study of Opioid Overdose Risk in Diverse Regions International Population Data Linkage Network Conference 2024 (Chicago)

## PROJECTS

- "Intelligent Transportation through the Integration of IoT" by AHEAD Innovation Commercialization Enhancement grants - Developed smart theft detecting device using Internet of Things and Machine Learning.
- MSc Independent Study - Automatic Bird Sound Identification using Machine Learning.
- VizuaMatix - Developed a Machine learning model to predict non-performing customers in a banking system. Purpose was to accurately classify the banking loans into performing and non-performing customers.
- Noritake Lanka Porcelain - Developed an Inventory management model for raw materials at Noritake Lanka Porcelain. Purpose was to minimize the inventory cost for raw materials.
- MAS Active Linea Intimo - Developed several useful VBA applications for the internal use.

## EXTRACURRICULAR ACTIVITIES

- University colors for cricket from The University of Peradeniya (2016/2017/2018)
- Member of Statistics and Operations Research Society, University of Peradeniya
- Represented U13, U15 and U17 cricket teams in Christ Church College, Matale

## REFEREES

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I do hereby certify that the above particulars mentioned by me are true and correct to the best of my knowledge.

H.D. Fernando