

# SACHITH ERANGA DASSANAYAKA

Personal Website

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## EDUCATION

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**PhD in Mathematics, Concentration: Statistics** 2017 - 2022

Texas Tech University, USA

Dissertation Topic: Artificial Intelligence Algorithms for Activity Pattern Detection in the Information Operation Networks

Advisor: Dimitri Volchenkov, PhD

Co-advisor: Ori Swed, PhD

**MS in Mathematics** 2017 - 2019

Texas Tech University, USA

**BSc in Computer Science (Special)** 2010 -2015

University of Kelaniya, Sri Lanka

Dissertation Topic: Audio Steganography for Secrete Communication.

Advisor: Hesiri Dhammika Weerasinghe, PhD

## PROFESSIONAL QUALIFICATION

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Machine Learning with Python (Issued by: Coursera, Authorized by: IBM) 2022

Python for Data Science and AI course (Issued by: Coursera, Authorized by: IBM) 2022

Diploma in Windows Network Administration 2013

Certificate Course in Web Designing, University of Kelaniya, Sri Lanka 2013

## PROFESSIONAL EXPERIENCE

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**Graduate Part-time Instructor** August 2018 - Present

Department of Mathematics and Statistics, Texas Tech University, USA

**Teaching Assistant** August 2017 - August 2018

Department of Mathematics and Statistics, Texas Tech University, USA

**Quality Assurance Engineer** April 2015 - April 2017

SimCentric Technologies (Pvt) LTD, Colombo, Sri Lanka

**Temporary Demonstrator** February 2015 - April 2015

Universiy of Kelaniya, Sri Lanka

**Internship** January 2014 - June 2014

Sri Lanka Telecom PLC, Colombo 01, Sri Lanka

## MEMBERSHIPS

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Member, American Statistical Association (ASA)

Member, Southern Political Science Association (SPSA)

Member, Society for Industrial and Applied Mathematics (SIAM)

Member, SIAM chapter at Texas Tech University (SIAM TTU)

Member, American Mathematical Society (AMS)

Member, Sri Lankan Students Association (SLSA), Texas Tech University, USA  
Member, Rawls Information Security Association (RISA), Texas Tech University  
Member, Graduate Student Advisory Council (GSAC), Texas Tech University

## TEACHING EXPERIENCE

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### Instructor of record

*Department of Mathematics and Statistics, Texas Tech University, USA*

<b>Mathematical Statistics for Engineers and Scientists</b>	Spring 2021, Summer 2021
<b>Statistical Methods</b>	Spring: 2020, Summer: 2019, 2020, Fall: 2020, 2021
<b>Calculus I with Applications</b>	Spring 2019
<b>Precalculus</b>	Fall 2018
<b>Introductory Mathematical Analysis I</b>	Fall 2019

## RESEARCH INTEREST

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Social Media Network Analysis  
Natural Language Processing (NLP)  
Neural Network Models  
Classification  
Computer Security (Cryptography and Steganography)

## AWARDS AND SCHOLARSHIPS

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<b>Study Abroad Competitive Scholarship</b>	Spring 2020 to Spring 2022
<b>Prestage-Cook Travel Award from the Southern Political Science Association (SPSA)</b>	2022
<b>Travel support from the 4th Annual Meeting of the SIAM Texas-Louisiana Section (TXLA)</b>	2021
<b>Travel support from the SIAM Southeastern Atlantic Section Conference (SIAM-SEAS)</b>	2021
<b>Travel support from the Graduate School, Texas Tech University</b>	2021
<b>Special recognition from Rawls Information Security Association (RISA), Texas Tech University</b>	2018

## REFEREED PUBLICATIONS

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**Eranga, D. M. S.**, and Hesiri D. Weerasinghe. "Audio transporters for unrevealed communication." In 2015 Fifteenth International Conference on Advances in ICT for Emerging Regions (ICTer), pp. 267-267. IEEE, 2015.

## PAPERS IN REVIEW

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Ori Swed, **Sachith Eranga Dassanayaka**, and Dimitri Volchenkov. "Keeping it Authentic: The Social Footprint of the Trolls' Network," Journal of Research in Social Movements, Conflicts and Change.

**Sachith Eranga Dassanayaka**, Ori Swed, and Dimitri Volchenkov. "Revealing the Structure of the Russian Information Operation Network on Twitter using a Predictive Model," Journal of Vibration Testing and System Dynamics.

## PAPERS IN PREPARATION

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**Sachith Eranga Dassanayaka**, Ori Swed, and Dimitri Volchenkov. "Uncover the Hidden Activity Patterns and Differentiate Fake Personas of the Russian Troll Networks."

## CONFERENCE PRESENTATIONS

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**American Statistical Association Conference on Statistical Practice (ASA CSP2022)** (upcoming) February, 2022

Identify the actors in the Russian Information Operation Networks and Three-Dimensional Geometric Visualization of Activities

**The Southern Political Science Association (SPSA) Annual Meeting 2022** (upcoming) January, 2022

Mapping the Russian Information Operation Networks to a Neural Network predictive model

**Joint Mathematics Meeting (JMM)** (upcoming) January, 2022

A Model to differentiate Actors in order to Uncover the Artificial Legitimacy of the Russian Information Operation Networks

**2nd Waterloo Student Conference of Statistics, Actuarial Science and Finance, University of Waterloo, Canada** November, 2021

Uncover the Hidden Activity Patterns and Differentiate Fake Personas of the Russian Troll Networks via a Machine Learning Model

**The 4th Annual Meeting of the SIAM Texas-Louisiana Section (TXLA21), University of Texas Rio Grande Valley, USA** November, 2021

Classifying the Actors of the Information Operation Networks through a Machine Learning Technique

**Conference of Texas Statisticians (Virtual), Texas Tech University, USA** October, 2021

Poster: A Machine Learning Technique to Categorize the Russian Information Operation Networks

**17th Applied Statistics 2021 conference (Virtual), Statistical Society of Slovenia, Slovenia** September, 2021

Using a Predictive Model to Map the Russian Information Operation Networks

**The 44th SIAM Southeastern Atlantic Section Conference, Auburn University, USA** September, 2021

Revealing the Russian Information Operation Networks structure using a predictive model

**Kelaniya International Conference on Advances in Computing and Technology, Sri Lanka** November, 2016

Two Tier Shield Unapparent Information Deliver along with the Visual Streams

**International Postgraduate Research Conference, Sri Lanka** December, 2015

Conceal Communication via MP3

**15th IEEE International Conference on Advances in ICT for Emerging Regions, Sri Lanka** August, 2015

Poster: Audio Transporters for Unrevealed Communication

## WORKSHOPS,WEBINARS, AND CONFERENCES ATTENDED

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**Symposium on Teaching Statistics, American Statistical Association, New York City Metro Area Chapter** November 02, 2021

Virtual event

**Big Data and AI 2021, Virtual event for data and analytics professionals (AI, Big Data, Cloud, Cybersecurity), Toronto** October 13-14, 2021

Virtual event

**VMworld 2021, Multi-Cloud Online event around the globe** October 5-7, 2021

Virtual event

<b>Building an Open, Petabyte-Scale Data Platform With Databricks</b> Webinar Talk	September 29, 2021
<b>Open Data Science Conference APAC 2021</b> Virtual Conference	September 15-16, 2021
<b>Red Raider Minisymposium Modeling in a Heterogeneous World!</b> Biology Room 102, Texas Tech University	August 20-21, 2021
<b>2nd annual workshop on Knowledge Guided Machine Learning</b> Webinar Talk	August 9-11, 2021
<b>Statistical in Imaging section</b> Webinar Talk	April 16, 2021
<b>Deployment Of Hybrid Cloud Machine Learning Workloads Using VMware Cloud Foundation with Tanzu</b> Webcast	January 28, 2021
<b>Scientific Computing Meets Machine Learning and Life Sciences</b> Matador Room in the student union building, Texas Tech University	October 7-9, 2019

## **VOLUNTARY SERVICES**

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Serve as a judge for the Arts & Humanities Graduate Students Research Conference, Texas Tech University	2021
COVID 19 vaccination clinic, conducted by the City of Lubbock Health Department	2021
President at SLSA, TTU	2019 - 2020
Event Coordinator at SIAM chapter, TTU	2019 - 2020
Treasurer at SLSA, TTU	2018 - 2019
Project QA Team Lead at RISA, TTU	2018

## **PROGRAMMING LANGUAGES**

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Python, Matlab, R, Java, CSS, PHP, Java Script, VB.Net, Joomla, PL/SQL

## **TECHNICAL SKILLS**

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Cisco Router and switch (layer3 and layer2) configuration

Strong knowledge and experience on Quality Assurance

Virtual Machine Software: VirtualBox and VMware Workstation Player

## REFERENCES

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**Dimitri Volchenkov, PhD** (Associate Professor)

Department of Mathematics and Statistics

Texas Tech University, Lubbock, Texas, USA.

Email: dimitri.volchenkov@ttu.edu

**Ori Swed, PhD** (Assistant Professor)

Department of Sociology, Anthropology, and Social Work

Texas Tech University, Lubbock, Texas, USA.

Email: ori.swed@ttu.edu

**Leif Ellingson, PhD** (Associate Professor)

Department of Mathematics and Statistics

Texas Tech University, Lubbock, Texas, USA.

Email: leif.ellingson@ttu.edu

**David Cannon, MEd** (Graduate Program Manager and Advisor)

Department of Mathematics and Statistics

Texas Tech University, Lubbock, Texas, USA.

Email: david.cannon@ttu.edu