

ANTON JERAN RATNARAJAH

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PERSONAL STATEMENT

I am a 3rd year PhD student at University of Maryland, College Park advised by Professor Dinesh Manocha. My research area is broadly in audio and speech signal processing.

EDUCATION

University of Maryland - College Park

PhD in Electrical and Computer Engineering

Cumulative GPA: 3.857/4.0

College Park, MD, USA

Aug. 2019 – Present (2024 expected)

University of Moratuwa

Bachelor of Science in Engineering

Cumulative GPA: 3.91/4.2

Moratuwa, Sri Lanka

Feb. 2014 – Jan. 2018

PUBLICATIONS

IR-GAN: Room Impulse Response Generator for Far-field Speech Recognition

Anton Ratnarajah, Zhenyu Tang, Dinesh Manocha

INTERSPEECH 2021

Moving Object Based Collision-Free Video Synopsis

Anton Jeran Ratnarajah, Sahani Goonetilleke, Dumindu Tissera, Kapilan Balagopalan, Ranga Rodrigo

IEEE International Conference on Systems, Man, and Cybernetics (SMC), Miyazaki, Japan, 2018

PREPRINTS

TS-RIR: Translated synthetic room impulse responses for speech augmentation

Anton Ratnarajah, Zhenyu Tang, Dinesh Manocha

Arxiv

WORK EXPERIENCE

Research Intern

Tencent America

Implemented neural-network based online room impulse response generator that can generate robust room impulse responses more than 400 times faster in CPU and more than 10^4 times faster in GPU than state-of-the-art room impulse response simulators.

May. 2021 – Aug. 2021

Bellevue, Washington, United States

Engineer

Wave Computing

Developed machine learning applications for Wave Computing's Dataflow Processing Unit (DPU) Architecture using Wave Flow Graph (WFG), a data flow description language developed by Wave Computing. Compiled and simulated the designs in Wave Computing's complete EDA toolchain. Debugged and proposed suggestions to improve the toolchain and the architecture.

Feb. 2018 – Jul. 2019

Colombo, Sri Lanka

Research Intern

HESL Lab, Nanyang Technological University

Successfully completed a project titled "Low complexity techniques for Vehicle Localization and Tracking" under the guidance of Dr. Lam Siew Kei.

Aug. 2016 – Dec. 2016

Singapore

TEACHING EXPERIENCE

CMSC 742: Algorithms in Machine Learning: Guarantees and Analyses

Teaching Assistant for Professor Furong Huang

University of Maryland

Fall 2021

ENEE 630: Advanced Digital Signal Processing

Teaching Assistant for Professor K. J. Ray Liu

University of Maryland

Fall 2020

ENEE 425: Digital Signal Processing
Teaching Assistant for Associate Professor Behtash Babadi

University of Maryland
Spring 2020

ENEE 425: Digital Signal Processing
Teaching Assistant for Professor Carol Espy-Wilson

University of Maryland
Fall 2019

ACADEMIC SERVICES

- I served as a reviewer for the 2019 Moratuwa Engineering Research Conference (MERCon).

HONORS AND AWARDS

- Won B.Sc. grant for outstanding SMCS B.Sc. thesis work from the IEEE SMCS Thesis Grant Initiative in 2018.
- Became Runner-Up in the Startathon Competition organized by Nanyang Technological University, Singapore in 2016.
- Our project titled Forensic Video Analytics Software was awarded Gold Medal in the “Tertiary Student Project (Technology)” Category on the 20th National Best Quality ICT Awards, in Sri Lanka.

COURSEWORK

Artificial Intelligence: Deep Learning for Audio-to-Audio Processing, Foundations of Deep Learning, Algorithms in Machine Learning: Guarantees and Analyses

Signal Processing: Speech and Audio Processing, Random Processes in Communication and Control, Advanced Digital Signal Processing, Information Theory

Other: Compilers and Optimization

TECHNICAL SKILLS

Languages: Python, C/C++, Java, Matlab

Public Libraries: Pytorch, Tensorflow, OpenCV

Software and Tools: Kaldi, Latex