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 — College Park, MD, USA
PhD in Electrical and Computer Engineering — *Aug. 2019 – Present (2024 expected)*
Cumulative GPA: 3.857/4.0

University of Moratuwa — Moratuwa, Sri Lanka
Bachelor of Science in Engineering — *Feb. 2014 – Jan. 2018*
Cumulative GPA: 3.91/4.2

Publications

IR-GAN: Room Impulse Response Generator for Far-field Speech Recognition
Anton Ratnarajah, Zhenyu Tang, Dinesh Manocha
INTERSPEECH 2021

TS-RIR: Translated synthetic room impulse responses for speech augmentation
Anton Ratnarajah, Zhenyu Tang, Dinesh Manocha
Accepted to IEEE ASRU 2021

Improving Reverberant Speech Seperation with multi-stage training and curriculum learning
Rohith Aralikatti, **Anton Ratnarajah**, Zhenyu Tang, Dinesh Manocha
Accepted to IEEE ASRU 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

Work Experience

Research Intern — May. 2021 – Aug. 2021
Tencent America — *Bellevue, Washington, United States*
mplemented 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.

Engineer — Feb. 2018 – Jul. 2019
Wave Computing — *Colombo, Sri Lanka*
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.

Research Intern — Aug. 2016 – Dec. 2016
HESL Lab, Nanyang Technological University — *Singapore*
Successfully completed a project titled "Low complexity techniques for Vehicle Localization and Tracking" under the guidance of Dr. Lam Siew Kei.

Teaching Experience

CMSC 742: Algorithms in Machine Learning: Guarantees and Analyses — University of Maryland
Teaching Assistant for Professor Furong Huang — *Fall 2021*

ENEE 630: Advanced Digital Signal Processing — University of Maryland
Teaching Assistant for Professor K. J. Ray Liu — *Fall 2020*

ENEE 425: Digital Signal Processing — University of Maryland
Teaching Assistant for Associate Professor Behtash Babadi — *Spring 2020*

ENEE 425: Digital Signal Processing — University of Maryland
Teaching Assistant for Professor Carol Espy-Wilson — *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