

# ANTON JERAN RATNARAJAH

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## PERSONAL STATEMENT

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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

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### 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

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### *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 Separation 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

## PREPRINTS

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### *FAST-RIR: Fast neural diffuse room impulse response generator*

Anton Ratnarajah, Shi-Xiong Zhang, Meng Yu, Zhenyu Tang, Dinesh Manocha, Dong Yu

Arxiv

## WORK EXPERIENCE

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### Research Intern

*Tencent America*

Implemented a neural-network-based fast diffuse room impulse response generator (FAST-RIR) for generating room impulse responses (RIRs) for a given acoustic environment.

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

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<b>CMSC 742: Algorithms in Machine Learning: Guarantees and Analyses</b> <i>Teaching Assistant for Professor Furong Huang</i>	University of Maryland <i>Fall 2021</i>
<b>ENEE 630: Advanced Digital Signal Processing</b> <i>Teaching Assistant for Professor K. J. Ray Liu</i>	University of Maryland <i>Fall 2020</i>
<b>ENEE 425: Digital Signal Processing</b> <i>Teaching Assistant for Associate Professor Behtash Babadi</i>	University of Maryland <i>Spring 2020</i>
<b>ENEE 425: Digital Signal Processing</b> <i>Teaching Assistant for Professor Carol Espy-Wilson</i>	University of Maryland <i>Fall 2019</i>

## ACADEMIC SERVICES

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

## HONORS AND AWARDS

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- 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

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**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

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

**Public Libraries:** Pytorch, Tensorflow, OpenCV

**Software and Tools:** Kaldi, Latex