Dr. V. G. REJU
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EDUCATION

Degree Title	Field of Study	Institution	Country	Date of Graduation	Division/ Remarks
PhD	Signal Processing	Nanyang Technological University	Singapore	04/02/2010	Completed with full scholarship.
MTech	Digital Electronics	Cochin University of Science and Technology	India	24/06/1994	First Class, Completed with full scholarship
BTech	Electrical and Electronics	University of Kerala.	India	19/06/1992	First Class

CAREER HISTORY

Designation	Organisation	Country	Duties	Employment period	Duration
Associate Professor	Department of Instrumentation, Cochin University of Science and Technology	India	Teaching, Research and related administrative works	10/05/2018-Present	
Senior Research Fellow	Nanyang Technological University	Singapore	Research and related administrative works	01/07/2015-09/05/2018	2 years 10 months
Research Fellow	Nanyang Technological University	Singapore	Research and related administrative works	01/03/2010-30/06/2015	5 years 3 month
Research Associate	Nanyang Technological University	Singapore	Research and related administrative works	14/05/2007-28/02/2010	2 years 9 months
Lecturer	Cochin University of Sc. & Tech., Cochin	India	Teaching and related administrative works	04/07/1995-30/08/2002	7 years 1 month
Lecturer	Institute of Human Resources Development (IHRD), Trivandrum	India	Teaching and related administrative works	04/07/1994-30/06/1995	11 months

PATENT FILED AND TECHNOLOGY DISCLOSERS

- US patent "Methods for Touch-point Localization on Solid Plate Surfaces via Time-Frequency Analysis" International Filing Date: 16.07.2012, International Application No.: PCT/SG2012/000250
- The following technology disclosers were successfully licensed to industry through NTUitive Pte Ltd, Nanyang Technological University
    o Acoustic signal processing algorithms, TD/104/13 dated 25 April 2013
    o Acoustic microphone signal processing, TD/188/13 dated 15 August 2013
    o Beamforming technologies for acoustic signal processing, TD/012/16 dated 30 December 2015
    o Eight-Channel Simultaneous Sampling USB Sound Acquisition System, TD/218/16 dated 11 April 2016

AWARDS AND RECOGNITIONS

- Best Paper Award for the paper titled "Noise Robust Source Localization on Solid Surfaces", in International Conference on Information, Communications and Signal Processing, 2015. Authors: Nguyen Quang Hanh, V. G. Reju, and Andy W. H. Khong.

- Research commercialization via spinoffs award from NTUitive Pte Ltd, Nanyang Technological University, March 2015.
- Institute of Engineers Singapore (IES) Prestigious Engineering Achievement Awards 2012 for the project "Next Generation Human Computer Interface for Everyday Objects".
- Graduate Aptitude Test in Engineering **(GATE'92)** percentile score **91.59.**

PROFESSIONAL SERVICES

Regular reviewer of many journals such as IEEE Transactions and international conferences

JOURNAL PUBLICATIONS

1. Anh H. T. Nguyen, **V.G. Reju**, and Andy W. H. Khong, "Directional Sparse Filtering for Blind Estimation of Under-determined Complex-valued Mixing Matrices", **IEEE Transactions on Signal Processing**, Vol. 68, No. 1, Mar. 2020, pp. 1990-2003.
2. Kai Wu, **V. G. Reju**, and Andy W. H. Khong, "Multi-source DOA Estimation In A Reverberant Environment Using A Single Acoustic Vector Sensor", **IEEE Transactions on Audio, Speech and Language Processing**, Vol. 26, No. 10, Oct. 2018, pp. 1848-1859.
3. Nguyen Quang Hanh, **V. G. Reju**, and Andy W. H. Khong, "Impact Localization on Rigid Surfaces Using Hermitian Angle Distribution for Human-Computer Interface Applications ", **IEEE Transactions on Multimedia,** 2017
4. Kai Wu, **V. G. Reju**, Andy W. H. Khong, and Shu Ting Goh, "Swarm Intelligence Based Particle Filter for Alternating Talker Localization and Tracking Using Microphone Arrays," **IEEE Transactions on Audio, Speech and Language Processing**, Vol. 25, No. 6, June 2017, pp. 1384-1397.
5. Benxu Liu, **V. G. Reju**, Andy W. H. Khong, "A Linear Source Recovery Method for Underdetermined Mixtures of Uncorrelated AR-Model Signals Without Sparseness", **IEEE Transactions on Signal Processing**, Vol. 62, No.19, Oct. 2014, pp. 4947 - 4958.
6. Benxu Liu, **V. G. Reju**, Andy W. H. Khong and V. V. Reddy, "A GMM Post-Filter for Residual Crosstalk Suppression in Blind Source Separation", **IEEE Signal Processing Letters**, Vol. 21, No. 8, Aug. 2014, pp.492-496.
7. **V. G. Reju**, Andy W. H. Khong and Amir Bin Sulaiman, " Localization of Taps on Solid Surfaces for Human-Computer Touch interfaces", **IEEE Transactions on Multimedia**, Vol. 15, No. 6, Oct. 2013, pp. 1365-1376.
8. **V. G. Reju**, S. N. Koh and I. Y. Soon, "Underdetermined Convolutive Blind Source Separation via Time-Frequency Masking," **IEEE Transactions on Audio, Speech and Language Processing**, Vol. 18, No. 1, Jan. 2010, pp. 101–116.
9. **V. G. Reju**, S. N. Koh and I. Y. Soon, "An algorithm for mixing matrix estimation in instantaneous blind source separation," **Signal Processing**, Vol. 89, Issue 9, September 2009, pp. 1762–1773.
10. **V. G. Reju**, S. N. Koh and I. Y. Soon, "Partial separation method for solving permutation problem in frequency domain blind source separation of speech signals," **Neurocomputing**, Vol. 71, No. 10–12, June 2008, pp. 2098–2112.
11. **V. G. Reju**, S. N. Koh and I. Y. Soon, "Convolution Using Discrete Sine and Cosine Transforms," **IEEE Signal Processing Letters**, Vol. 14, No. 7, July 2007, pp. 445–448.

CONFERENCE PUBLICATIONS

1. Anh H. T. Nguyen, **V.G. Reju**, and Andy W. H. Khong, "A Method Based on L-BFGS to Solve Constrained Complex-Valued ICA", ICASSP, Brighton, UK, May 2019
2. **V.G.Reju**, Rajan S. Rashobh, Anh H.T. Nguyen, and Andy W.H.Khong, "An Efficient Multi-Source DOA Estimation Algorithm for Underdetermined System", 16th International Workshop on Acoustic Signal Enhancement (IWAENC), Tokyo, Japan, Sept., 2018
3. Anh H. T. Nguyen, V.G. Reju, Andy W. H. Khong, and I. Y. Soon, "Learning Complex-Valued Latent Filters with Absolute Cosine Similarity", ICASSP 2017, pp. 2412-2416.
4. Nguyen Quang Hanh, V. G. Reju, and Andy W. H. Khong, "On TOA Estimation of Vibration Signals for Localizing Impact on Solid Surfaces", ICASSP 2017, pp. 3011-3015.
5. Nguyen Quang Hanh, V. G. Reju, and Andy W. H. Khong, "Source Localization on Solids Utilizing Logistic Modeling of Energy Transition in Vibration Signals", ICASSP 2016, pp. 2867-2871.
6. Nguyen Quang Hanh, **V. G. Reju**, and Andy W. H. Khong, "Noise Robust Source Localization on Solid Surfaces", International Conference on Information, Communications and Signal Processing, 2015, pp. 1-5. (**BEST PAPER AWARD**)

7. Huizhi Shen, **V. G. Reju** and Andy W. H. Khong, "Speech enhancement via covariance estimation using Hermitian angle in adaptive beamforming", IEEE International Conference on Digital Signal Processing, July 21-24, 2015, Singapore, pp. 1196-1200.
8. Kai Wu, **V. G. Reju**, Andy W. H. Khong, Multi-source direction-of-arrival estimation in a reverberant environment using single acoustic vector sensor, ICASSP 2015, pp. 444 – 448.
9. Kai Wu, **V. G. Reju**, Andy W. H. Khong, Single-channel speech enhancement in a transient noise environment by exploiting speech harmonicity, ICASSP 2015, pp. 5088 – 5092.
10. Rohith Mars, **V. G. Reju** and Andy W. H. Khong, " A Frequency-Invariant Fixed Beamformer for Speech Enhancement", Asia-Pacific Signal and Information Processing Association Annual Summit and Conference, 9-12 Dec, 2014.
11. Arun Kattukandy, **V. G. Reju**, Andy W. H. Khong, "Source Localization on Solids Utilizing Time-frequency Analysis of Parameterized Warped Signals" ICASSP 2014, pp. 689 - 693.
12. Benxu Liu, **V. G. Reju**, and Andy W. H. Khong, "A Preprocessing Method for Underdetermined Blind Source Separation Using Single-Source Confidence Measure", International Conference on Information and Communications Security 2013.
13. Benxu Liu, **V. G. Reju**, Andy W. H. Khong, "Underdetermined Instantaneous Blind Source Separation of Sparse Signals with Temporal Structure using the State-Space Model", ICASSP, 2013, pp. 81 - 85.
14. Benxu Liu, **V. G. Reju**, Andy W. H. Khong, Underdetermined Blind Speech Separation Using LPC and Sparseness, In Proc. of ICSPS, pp.219-223, Aug. 2011
15. **V. G. Reju**, S. N. Koh and I. Y. Soon, "A Robust Correlation Method for Solving Permutation Problem in Frequency Domain Blind Source Separation of Speech Signals," In Proc. of the IEEE Asia Pacific Conference on Circuits and Systems, pp. 1891–1894, Dec. 2006.
16. **V. G. Reju**, S. N. Koh, I. Y. Soon and X. Zhang, "Solving permutation problem in blind source separation of speech signals: A method applicable for collinear sources," In Proc. of the Fifth International Conference on Information, Communications and Signal Processing, pp. 1461–1465, Dec. 2005.
17. **V. G. Reju** and Tong Yit Chow, "A computationally efficient noise estimation algorithm for speech enhancement", In Proc. of the IEEE Asia Pacific Conference on Circuits and Systems, pp. 193-196, Dec 2004.

BOOK CHAPTERS

1. Rohith Mars, **V. G. Reju**, Andy W. H. Khong, Y. Hioka and K. Niwa, "Beamforming Techniques Using Microphone Arrays"*, Academic Press Library in Signal Processing, Volume 7: Array, Radar and Communications Engineering*, Ed. Sergios Theodoridis and Rama Chellappa, Academic Press (An imprint of Elsevier), pp. 585-610, October 2017, ISBN: 9780128118870.
2. Nguyen Quang Hanh, **V. G. Reju**, and Andy W. H. Khong, "Location template matching on rigid surfaces for human-computer touch interface applications." *Recent Advances in Information, Communications and Signal Processing*, River Publishers, March 2018, ISBN: 9788793609433.