DR FAN (AARON) ZHANG

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EMPLOYMENT

2012-	**Research Associate/Research Fellow** with projects on AI-enhanced video compression, video quality assessment, perceptual video coding, immersive video formats and drone cinematography.	UNIVERSITY OF BRISTOL

EDUCATION

2008-2012	**PhD** in Electrical and Electronic Engineering	UNIVERSITY OF BRISTOL, BRISTOL
2005-2008	**Master** of Engineering	JIAO TONG UNIVERSITY, SHANGHAI
2001-2005	**Bachelor** of Engineering (Honours)	JIAO TONG UNIVERSITY, SHANGHAI

RESEARCH INTERESTS

Video Coding	–AI-enhanced deep video compression –New CNN architectures for compression –Content-aware compression –Rate quality optimisation –Perceptual video compression –Volumetric video coding
Quality Assessment	–Full reference/reduce reference quality metrics –HVS property characterisation –Machine learning based quality metrics –Perceptual loss functions –Subjective quality assessment
Immersive Formats	–HDR, HFR and high spatial resolution video quality assessment –AI-based perceptual format adaptation

MAJOR RESEARCH OUTPUT

2020	**BVI-DVC: a training database for deep video compression** –It has been adopted by MPEG JVET for developing VVC ML-based tools.
2020	**CVEGAN: a perceptual-inspired GAN for video compression** –A new GAN architecture trained with perceptual loss functions.
2020	**MFRNet: a new CNN architecture for post processing** –It has been accepted by the IEEE Journal of Selected Topics in Signal Processing.
2019	**UAV Cinematography Simulation** –Developed a UAV simulation software based on realistic 3D environments.
2018	**ViSTRA: video compression based on resolution adaptation** –A framework integrating quantisation resolution adaptation, CNN-based super resolution and perceptual quality assessment. –It was submitted to MPEG JVET as a proposal for VVC, which was one of the single tools providing the most significant gains.

	–It won the IEEE ICIP 2017 Video Compression Grand Challenge.
2018	**BVI-HD: a subjective database on compressed video content.**
	–It has been published on the IEEE Trans on Multimedia.
	–The database has also been published online with more than 200 downloads.
2017-2018	**Immersive video quality metrics**
	–Developed two quality metrics (FRQM and SRQM) for temporal and spatial resolution adaptations.
2017-2018	**Immersive video databases**
	–Published two immersive video databases (BVI-HFR and BVI-SR) associated with subjective data.
	–They have been downloaded for more than 100 times.
2016	**A study on optimal video duration for subjective quality assessment**
	–Two journal papers have been published on the IEEE Trans on Multimedia and Elsevier Signal Processing: Image Communication
2015	**Adaptive Lagrange multipliers for rate-distortion optimisation**
	–This was published in the IEEE Trans. on CSVT.
2013	**PVM: a perceptual quality metric for video compression**
	–This was published on the IEEE Trans. on CSVT.
2011	**Perceptual video compression using texture synthesis**
	–This was published on the IEEE Journal of Selected Topics in Signal Processing.

REVIEWERSHIPS

	Journals	
Since 2020	Proceedings of IEEE	IEEE
Since 2019	IEEE Access	IEEE
Since 2018	Transactions on Broadcasting	IEEE
Since 2018	Transactions on Multimedia	IEEE
Since 2015	Transactions on Circuits and Systems for Video Technology	IEEE
Since 2015	Transactions on Image Processing	IEEE
Since 2014	Signal Processing Letters	IEEE
Since 2013	Signal Processing: Image Communication	ELSEVIER
	Conferences	
Since 2019	Picture Coding Symposium	
Since 2019	European Signal Processing Conference (EUSIPCO)	
Since 2016	International Conference on Image Processing (ICIP)	IEEE
Since 2012	International Conference on Multimedia and Expo (ICME)	IEEE
Since 2014	International Conference on VCIP	IEEE