**MCSNet: Multi-channel splitting network for Single Image Super-resolution**

[1]Wazir Muhammad, [2]Supavadee Aramvith

[1] Department of Electrical Engineering, Faculty of Engineering, Chulalongkorn University, Bangkok, 10330, Thailand and Electrical Engineering Department, BUET, Khuzdar.

,[2] Multimedia Data Analytics and Processing Unit, Department of Electrical Engineering, Faculty of Engineering, Chulalongkorn University, Bangkok 10330, Thailand.

[1][wazir.laghari@gmail.com](mailto:wazir.laghari@gmail.com) ,[2] [supavadee.a@chula.ac.th](mailto:supavadee.a@chula.ac.th).

M: +6622186911

**Abstract:**The performance and processing speed of single-image super-resolution have been increased every day due to the rapid advancement in convolutional neural network (CNN) architectures. However, CNN based architectures have a high computational cost, more processing speed and reconstructed results are still not satisfactory. Furthermore, CNN architectures depend on the single channel type network architecture to reconstruct the high-resolution (HR) image, which is also create problem during the training and extracted features are not received at the later end layer. To report these problems, we propose a Multi-channel splitting network for Single Image Super-resolution known as MCSNet. In addition, multi-channel splitting technique is used to extract and share the feature information through different routes, which is very important to resolve the SISR problem. Extensive quantitative and qualitative experimental results show that our proposed approach achieves a better trade-off against other state-of-the-art methods in terms of peak signal-to-noise ratio (PSNR), computational complexity, and processing speed. Especially on challenging enlargement scale factor 8×, our proposed method improves overall average PSNR on all test datasets including as Set5, Set14, Urban100, and Manga109 by 2.04dB with the base line method.

**Biography:** Supavadee Aramvith received the B.S degree in Computer Science from Mahidol University in 1993. She received the M.S. and Ph.D. degrees in Electrical Engineering from the University of Washington, Seattle, USA, in 1996 and 2001, respectively. She joined Chulalongkorn University in June 2001. Currently, she is an Associate Professor at Department of Electrical Engineering with specialization Video Technology. She published over 130 papers in International Conference Proceedings and Journals with 4 International Book Chapters. She also chairs Region 10 Sections & Chapters Committee and was the candidate for 2021-2022 Region 10 Director-Elect.