

Press Release



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28 January 2020

University of Cyprus faculty members win the 2019 IEEE Signal Processing Letters Best Paper Award

Two faculty members of the University of Cyprus have won the 2019 Best Paper Award of the international journal IEEE Signal Processing Letters for their paper titled “Fairness for Non-Orthogonal Multiple Access in 5G Systems”.

The authors of the awarded paper, Assistant Professor Stelios Timotheou and Associate Professor Ioannis Krikidis are faculty members of the Department of Electrical and Computer Engineering of the University of Cyprus, and also faculty members of the KIOS Research and Innovation Center of Excellence and the IRIDA Research Centre for Communication Technologies, respectively. The research presented in the paper was partially funded by the Research and Innovation Foundation of Cyprus.

Their paper investigates the problem of optimal power allocation in Non-Orthogonal Multiple Access (NOMA) systems. NOMA is an essential enabling technology for the fifth generation (5G) wireless networks to meet increasing demands for low latency, high throughput, and high connectivity. The paper considers a downlink topology with a single-antenna base-station and multiple single-antenna users, and investigates the problem of maximizing fairness among users under i) instantaneous channel state information (CSI), and ii) average CSI at the transmitter. Despite the difficulty of the considered problems, the authors have developed novel approaches to optimally solve both problems through fast and easily implementable algorithms that require no specialized software. The results of the paper demonstrate that the proposed NOMA solutions achieve an order of magnitude better fairness performance compared to state-of-practice Orthogonal Multiple Access schemes.

The award is granted annually by the Signal Processing Society of the Institute of Electrical and Electronics Engineers (IEEE) based on a five-year eligibility window. For the period 2014-2018, the particular journal has published around 1900 papers. The award-winning papers are selected on the basis of the technical novelty, the research significance of the work, as well as quality and effectiveness in presenting subjects in an area of high impact to the Society's members. The award will be presented to the authors by the President of the IEEE Signal Processing Society at the

45th International Conference on Acoustics, Speech, and Signal Processing (ICASSP 2020), to be held in Barcelona, Spain, May 4 - 8, 2020.

The award demonstrates the high-quality of research conducted at the University of Cyprus. It also provides international visibility and recognition for the research performed in Cyprus in the field of Information and Communications Technologies (ICT) and particularly in the areas of Optimization, Signal Processing, and Wireless Communications.

Information on the award can be found here:

<https://signalprocessingsociety.org/get-involved/award-recipient>

The paper can be viewed here: <https://ieeexplore.ieee.org/document/7069272>



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