
Postdoc Position (M/F) in Wireless Communications Networks

(Ref : ERC_Postdoc1_CS_PE_Jan_2017)

Research topics	Wireless Communication Networks, Caching
Department	Communication Systems
Parution date	03/2/2017
Start date	1 st -2 nd Trimester of 2017
Duration	Contract of duration 12 (or 18) months
Description	<p>The key scientific challenge which is to pursue the mathematical convergence between feedback-information-theory and preemptive distributed data-storage, and to then design ultra-fast memory-aided communication algorithms, that pass a battery of tests for real-life validation.</p> <p>First, fundamental limits of memory-aided wireless communications will be explored so that the relationship between feedback information and storage-capacity can be better understood. This will lead to the design of specific algorithms that will focus, for example, on “feedback-boosted coded caching” or memory-aided interference alignment. A third important step will be about the use of memory to simplify the structure of wireless networks; it turns out that a bit of feedback-aided caching can fundamentally alter the structure of the network into something much simpler. All these results will then be able to lead to a unified theory stating how memory can be converted into throughput in the case of very large networks such as ultra-high frequency networks, optical networks or the cloud.</p> <p>Interdisciplinary research in the general area of wireless communication networks, with emphasis in cache-aided multiuser interference-limited networks of the future, with subtopics potentially including:</p> <ul style="list-style-type: none">• Cache-aided cooperation in networks• Information theoretic bounds of coded caching• Stochastic network optimization in the presence of caching• Dynamic programming and machine learning for cache-aided networks <p>Additional advantages:</p> <ul style="list-style-type: none">- Competitive salary (PhD students receive approximately 2000 euros) and strong social benefits.- Funding supports joint collaboration and travel to Yale University, USA and TU Berlin.- Frontier research: "European Research Council (ERC) grants support frontier research. The ERC encourages in particular proposals that cross disciplinary boundaries, pioneering ideas that address new and emerging fields and applications that introduce unconventional, innovative approaches."
Requirements	<p>Applicants for a Post-Doctoral position must have a Ph.D. in Electrical Engineering or Applied Mathematics/Stat, or related fields, and must have strong research in telecommunications (with emphasis on information theory, interference management, networking, caching, etc.), and academic excellence including publications in top journals and international conferences.</p>



Application Applications should be submitted by e-mail to secretariat@eurecom.fr with the reference :
ERC_Postdoc1_CS_PE_Jan_2017

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