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27 years old, Burkinabé

Abdoulaye TALL

2G/3G/LTE radio (self-)optimization engineer

Career objective: Apply my knowledge and skills in radio optimization and engineering to operational activities. Contribute to mobile networks evolution including SON.

Skills

Technologies	Knowledge of radio interface and architectures of GSM, UMTS and LTE/LTE-Advanced, self-organizing networks - SON (e.g. load balancing, inter-cell interference coordination), MIMO, software-defined networks (SDN).
Techniques	Dimensioning, link budget, radio network planning (antenna optimization), radio resource management.
Programming	Matlab, Mathematica, R, C/C++, CSS, Java, JavaScript, HTML, PHP, Python, SQL.
Languages	French (fluent), English (fluent).

Experience

Dec. 3, 2012 - Dec. 2nd, 2015 (target)
Research engineer - Doctorate, *Orange Labs - mobile operator*, Issy Les Mx, France.
Self-optimizing algorithms design for 4G.
• Development of SON algorithms for load balancing, inter-cell interference coordination, resource allocation and beam focusing in massive MIMO for homogeneous/heterogeneous networks, vertical and virtual sectorization. • Design of a formal methodology for SON coordination.
• Coding and evolution of an event-based LTE radio interface simulator in Matlab in order to evaluate the performance of proposed algorithms.
• 8 conference, 1 journal and 1 magazine papers published including a best paper at EuCNC 2015 conference. • A Poster and a micro-presentation at Orange's PhD students day, selected for presentation to Cédric Villani (Fields Medal 2010). • A demo presented Orange Labs research exhibition. • Research results presented to Orange Labs scientific council.

Feb–Jun 2012
End of studies project, *King Abdullah University of Science and Technology* , Thuwal, KSA.
Characterization of the capacity of generalized fading MIMO channels at low SNR.
• I derived a closed-form expression for the capacity of MIMO channels and exploited it to design a capacity-achieving on-off transmission scheme.

Août 2011
Engineering internship, *Telecel Faso - mobile operator*, Ouagadougou, Burkina Faso.
Preliminary studies for 2G to 3G migration.
• I studied the candidate technologies fulfilling 3G specification requirements and recommended the most appropriate (UMTS) in terms of reuse of existing GSM infrastructure.
• I gathered documentation on UMTS dimensioning and produced a Java applet for basic dimensioning.

Education

Since 2012
Doctorate in Computer science, *Avignon University*, France.
Optimization and Self-optimization for LTE-Advanced networks using stochastic approximation, convex optimization, queuing theory and multi-armed bandits.

2009–2012
Polytechnic Engineer, *Tunisia Polytechnic School*, La Marsa, Tunisia.
General engineering studies with major in signals and systems.

2007–2009
DEUG, *Preparatory school for engineering studies*, Sfax, Tunisie.
General university studies with major in Maths and Physics.

Centres d'intérêt

Sport	Biking, Football, Basket-Ball, Running.
Loisirs	Web programming, cinema, video games.

Patent

A. Tall, Z. Altman, "Load balancing method in heterogeneous mobile network", submitted.

Publications

A. Tall, Z. Altman, and E. Altman, "Virtual sectorization: design and self-optimization," in *2015 IEEE VTC Spring Workshop IWSON*, (Glasgow, Scotland), May 2015.

A. Tall, Z. Altman, and E. Altman, "Self-optimizing Strategies for Dynamic Vertical Sectorization in LTE Networks," in *2015 IEEE WCNC*, (New Orleans, USA), Mar. 2015.

A. Tall, R. Combes, Z. Altman, and E. Altman, "Distributed Coordination of Self-Organizing Mechanisms in Communication Networks," *IEEE Transactions on Control of Network Systems*, vol. 1, pp. 328–337, Dec. 2014.

A. Tall, Z. Altman, and E. Altman, "Self organizing strategies for enhanced ICIC (eICIC)," in *2014 12th WiOpt*, pp. 318–325, May 2014.

A. Tall, Z. Altman, and E. Altman, "Multilevel beamforming for high data rate communication in 5g networks," *arXiv preprint arXiv:1504.00280*, 2015.

H. Sidi, Z. Altman, and **A. Tall**, "Self-optimizing mechanisms for EMF reduction in heterogeneous networks," in *2014 12th WiOpt*, pp. 341–348, May 2014.

K. Trichias, R. Litjens, **A. Tall**, Z. Altman, and P. Ramachandra, "Performance evaluation & SON aspects of vertical sectorisation in a realistic LTE network environment," in *2014 11th ISWCS*, pp. 131–137, Aug. 2014.

K. Trichias, R. Litjens, **A. Tall**, Z. Altman, and P. Ramachandra, "Self-Optimisation of Vertical Sectorisation in a Realistic LTE Network," in *EuCNC 2014*, (Paris, France), 2015.

Z. Altman, M. Amirijoo, F. Gunnarsson, H. Hoffmann, I. Kovacs, D. Laselva, B. Sas, K. Spaey, **A. Tall**, H. van den Berg, and K. Zetterberg, "On design principles for self-organizing network functions," in *2014 11th ISWCS*, pp. 454–459, Aug. 2014.

G. Poulios, K. Tsagkaris, P. Demestichas, **A. Tall**, Z. Altman, and C. Destre, "Autonomics and SDN for self-organizing networks," in *2014 11th ISWCS*, pp. 830–835, Aug. 2014.

G. Poulios, K. Tsagkaris, P. Demestichas, **A. Tall**, Z. Altman, and C. Destre, "An Open Framework for Programmable, Self-managed Radio Access Networks," *to appear in IEEE Communications Magazine*, 2015.

A. Tall, Z. Rezki, and M.-S. Alouini, "MIMO Channel Capacity with Full CSI at Low SNR," *IEEE Wireless Communications Letters*, vol. 1, pp. 488–491, Oct. 2012.

F. Benkhelifa, **A. Tall**, Z. Rezki, and M.-S. Alouini, "On the Low SNR Capacity of MIMO Fading Channels With Imperfect Channel State Information," *IEEE Transactions on Communications*, vol. 62, pp. 1921–1930, June 2014.

F. Benkhelifa, **A. Tall**, Z. Rezki, and M.-S. Alouini, "On the low SNR capacity of MIMO fading channels with imperfect channel state information," in *2014 12th WiOpt*, pp. 303–310, May 2014.

F. Benkhelifa, **A. Tall**, Z. Rezki, and M.-S. Alouini, "On the low SNR capacity of log-normal turbulence channels with full CSI," in *2014 3rd IWOW*, pp. 25–29, Sept. 2014.