

## Omar A. Elgendy

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### Personal Information:

- Citizenship: Egyptian
- Current & Permanent Addresses: 27 - 2<sup>nd</sup> Block - Madinet Eltogarien - Mokattam 11571 - Cairo - Egypt.
- Languages: Arabic (Native), English (Excellent), French (Basic)

### Objective:

- To pursue a PhD degree with distinction in communications, in which mathematics and communications sciences are combined to solve real life problems in academia and industry.
- To use the PhD knowledge and experience to solve problems either in industry, by working as a consultant; or in academia, by holding a post-doctoral position.
- To hold a faculty position, after pursuing PhD, to teach mathematics or communications to students.

### Education:

- **Sept 2011 - Present:** M.Sc., Engineering Math. and Physics Dept., Faculty of Engineering, Cairo University. Website: [www.eng.cu.edu.eg](http://www.eng.cu.edu.eg)
  - Courses: 1) Advanced Linear Algebra, 2) Linear and Integer Programming, 3) Nonlinear and Dynamic Programming, 4) Numerical Linear Algebra, 5) Multiuser Communication, and 6) Statistical Pattern Recognition.
  - GPA: 3.7
  - Thesis: Text-Independent Speaker Identification System in Noisy Environment using Large-Margin Discriminative Criterion.
- **Sept 2010 - Jul 2011:** Diploma in Pure Math., Engineering Math. and Physics Dept., Faculty of Engineering, Cairo University. Website: [www.eng.cu.edu.eg](http://www.eng.cu.edu.eg)
  - Courses: 1) Linear Algebra, 2) Introduction to Operation Research and Optimization, 3) Abstract Algebra, 4) Numerical Analysis, 5) Probability and Statistics, 6) Functional Analysis, and 7) Differential Geometry.
- **Sept 2005 - Jul 2010:** B.Sc., Electronics and Electrical Communications Engineering Dept., Faculty of Engineering, Cairo University.
  - Final grade: Distinction with honors, 88.21%
  - Ranked as the 13<sup>th</sup> among 343 students.
  - Graduation project: RFID Reader Implementation on FPGA (in the HF Range), Grade: Distinction.

Honors and Awards:

- **Dec 2012:** Research Assistant of the month award, the 4G++ research project.
- **Sept 2010:** Fellowship for an M.Sc. degree, Faculty of Engineering, Cairo University.
- **Aug 2010:** Honored by the Electronics and Electrical Communications Engineering Dept., Faculty of Engineering, Cairo University for obtaining 2<sup>nd</sup> place in a graduation projects competition.
- **Jan 2010:** Financial support of L.E. 1,600 for graduation project from Information Technology Industry Development Agency (ITIDA).
- **Sept 2005:** Fellowship for a B.Sc. degree, Faculty of Engineering, Cairo University.
- **2005:** Honored by Faculty of Engineering, Cairo University; Egyptian Syndicate of Engineers; and Egypt Air Company for academic distinction in secondary education stage (Final grade: 99.8%)

Research Experience:

- **Apr 2011 - Oct 2013:** Research Assistant in 4G++ research project that aims at solving many of the significant challenges of LTE and LTE-Advanced systems. Assigned research points include:
  - Radio Resource Management (RRM) in Relay-Enhanced Cells.
  - Optimal Relay placement in wireless networks.Optimization methods used include Coordinate Ascent Method, Difference of two Convex functions (DC) programming, Mixed Integer Linear Programming (MILP).
- **Aug 2010 - Present:** M.Sc. Research which tackles the speaker Identification problem in noisy environment, which is formulated as a Multi-class classification problem. The assigned tasks include:
  - Using the Large-Margin criterion for Discriminative Training (DT) of speaker models, and comparing it with other DT techniques like Maximum Mutual Information (MMI), and Minimum Classification Error (MCE). Results are compared to the classical Generative Training (GT) technique: Maximum Likelihood.
  - Optimization using Semidefinite Programming, Conjugate Gradient, and Steepest Descent techniques.

Publications:

- **Elgendy, Omar A.,** Mahmoud H. Ismail, and Khaled Elsayed. “On the relay placement problem in a multi-cell LTE-Advanced system with co-channel interference.” *Wireless and Mobile Computing, Networking and*

*Communications (WiMob), 2012 IEEE 8th International Conference on. IEEE, 2012.*

- **Elgendy, Omar A.**, Mahmoud H. Ismail, and Khaled Elsayed. “Max-Min Fair Resource Allocation for LTE-Advanced Relay-Enhanced Cells”, *IEEE Wireless Communication and Networking Conference (WCNC), 2014.*

Industrial Experience:

- Summer 2009: Internship in Alcatel-Lucent and Raya Holding companies
- Summer 2008: Attended a course on Mentor Graphics tools.
- Summer 2007: Internship in Egypt Air Company.

Teaching Experience:

- **Fall 2010 - Present:** Teaching Assistant in Engineering Math. and Physics dept., Faculty of Engineering, Cairo University for the following courses:
  - Probability and Statistics.
  - Linear Algebra.
  - Ordinary Differential Equations and Partial Differentiation.
  - Partial Differential Equations (Analytical and Numerical Solution).
  - Numerical Analysis.
  - Algebra and Calculus.
  - Engineering problem solving and Programming using C++

The teaching responsibilities include grading of midterms, quizzes, and assignments for a number of students that exceeds 200 students in some classes.

- **Aug 2009 - Apr 2010:** Moderator in an Engineering workshop entitled Simulating Application For Engineers (SAFE) in Step Towards Progress (STP) student activity, Faculty of Engineering, Cairo University. The responsibilities include:
  - Preparation of suitable scientific material for students from diverse majors.
  - Preparation of presentations.
  - Assessment and Evaluation of students.
  - Obtaining academic sponsorship from Mentor Graphics Egypt.

Technical Skills:

- MATLAB, C++, C, Assembly, CVX, MOSEK, CPLEX, VHDL, L-Edit, Spice, Microcontrollers, FPGA, MS word, LyX, LaTeX, MS Windows, and Unix.

Social Activities:

- Activities with charity organizations including volunteering in feeding campaigns.
- Academic member in Steps Towards Progress (STP) student activity in 2010.

References:

- Available upon request.