

**Curriculum Vitae**  
**Of**  
**Dr. Nadia AbdelSamie Basyouni Kotb Saad**

**Personal Data:**

**Full Name:** Nadia AbdelSamie Basyouni Kotb Saad

**Current Job Position:**

Assistant Professor of Mathematics, Qassim university, KSA

Assistant Professor of Mathematics Helwan University, Cairo, Egypt

**Gender:** Female

**Nationality:** Egyptian

**Marital status:** Married with three kids

**Present Address:** Ar Rass, Qassim, KSA

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**Languages spoken:** Arabic and English

## **Education:**

**Specialization:** Mathematics and Statistics

- **Ph.D.** in Random Matrices, Statistics, University of Ottawa, Ontario, Canada
- **M.Sc.** in Functional Analysis, Pure Mathematics, Helwan University, Egypt
- **B.Sc.** in Mathematics (Excellent with honors), Helwan University, Cairo, Egypt.

## **Degrees**

- **2008 – 2013**

**Ph.D. in Mathematics (Random Matrices)**, Department of Mathematics and Statistics, University of Ottawa, Ontario, Canada.

Thesis entitled “**Random Matrix Theory with Applications in Statistics and Finance**”,

Under Supervision of

Prof. Benoit Collins, Associate Professor at University of Ottawa, and  
Prof. David McDonald, Professor at University of Ottawa.

- **2001 – 2004**

**Master in Pure Mathematics (Functional Analysis)**, Department of Mathematics, Helwan University, Cairo, Egypt.

Thesis entitled “**Extensions of States on  $C^*$ -algebras**”,

Under Supervision of

Prof. Adel M. Zaki, Associate Professor at Helwan University and  
Prof. Zeinab M. Abd-el-Kader, Professor at Helwan University.

- **1995 – 1999**

**Bachelor of Science in Mathematics (Excellent with honors)**,  
Helwan University, Cairo, Egypt.

## **Positions:**

- Since Oct. 2018: Assistant Professor, of Mathematics, Qassim University, KSA.
- Since Aug. 2014: Assistant Professor of Mathematics, Helwan University, Cairo, Egypt.
- 2014 – 2015: Post-doctoral fellow at Department of Statistical and Actuarial Sciences, Western University, Ontario, Canada.

- 2013 – 2014: Post-doctoral fellow at Department of Mathematics and Statistics, University of Ottawa, Ontario, Canada.
- Fall 2013: Instructor at Department of Mathematics and Statistics, University of Ottawa, Ontario, Canada.
- 2009 – 2013: Research assistant and lecturer assistant at Department of Mathematics and Statistics, University of Ottawa, Ontario, Canada.
- 2004 – 2008: Assistant lecturer at Department of Mathematics, Faculty of Science, Helwan University, Cairo, Egypt.
- 2001 – 2004: Demonstrator at Department of Mathematics, Faculty of Science, Helwan University, Cairo, Egypt.

### **Research interests:**

Random Matrix Theory, Moment Method, Weingarten Calculus, Gaussian matrices and their Pseudo- inverse, Multinomial random vectors, Exponentially Weighted Moving Average (EWMA) Model, Blocked, Repeated measures experimental designs, Compressed sensing algorithms, Shannon entropy, Portfolio and risk management, Markowitz optimal portfolio, Retrocession market.

### **Publications / Manuscripts in preparation:**

- Orthogonal Matching Pursuit and Retrocession Market, (joint work with M. Davison), work in process.
- Moments of Multinomial Random Vectors with Application to Experimental Designs, (joint work with M. Alvo and B. Collins), work in process.
- Integration of invariant matrices and moments of inverses of Ginibre and Wishart matrices journal of multivariate analysis 126 (2014), 1-13
- Compound Wishart Matrices and Noisy Covariance Matrices: Risk Underestimation, (joint work with B. Collins and D. McDonald), submitted 2016.
- Random Matrix Theory with Applications in Statistics and Finance, Ph.D. thesis, University of Ottawa.
- A note on the extension of states on  $C^*$ -algebras, (joint work with A. M. Zaki and Z. M. Abd-Elkader, The Mathematical Physical Society of Egypt, V86n1, p9-14 (2008)).

### **Conferences / Workshops:**

- Workshop in Financial and legal aspects in the university, Helwan University, Egypt (2014-2015).
- Workshop in Management of time and meetings, Helwan University, Egypt (2014-2015).
- Workshop in University administration, Helwan University, Egypt (2014-2015).
- Organize the Western Industry ProblemSolving Week (IPSW), Westernuniversity, Ontario, Canada (2014).
- Organize the Colloquium at Department of Statistical and Actuarial Sciences, Western University, Ontario, Canada (2014).
- Canadian Applied and Industrial Mathematics Annual Meeting (CAIMS), Toronto, Canada (2012).
- Canadian Mathematical Society (CMS), Regina University, Saskatchewan, Canada (2012).
- Fields Institute for Research in Mathematical Science, University of Ottawa (2010).
- Wigner Matrices: Semicircular Law", Analysis Seminar, University of Ottawa (2009).
- "Genus Expansion of Random Matrices and Asymptotic Freeness", Analysis Seminar, University of Ottawa (2009).
- "Introduction to Random Matrix Theory and Free Probability", Analysis Seminar, University of Ottawa (2009).
- CRM (Random matrices, Related Topics, and Applications), Montreal University (2008).
- Canadian Abstract Harmonic Analysis Symposium, Carleton University (2008).
- Fields workshop around Cones' Embedding Problem, University of Ottawa (2008).
- Fields Institute Workshop on Topological Methods in Algebra, Analysis and Dynamical Systems, Nipissing University (2008).
- Workshop in the Use Technology in Teaching, Helwan University (2005).
- Workshop in the Modern Ways in Teaching, Helwan University (2005).

- Workshop in the Preparation of the University Professor, Helwan University (2005).
- Workshop in the Scientific Research, Helwan University (2005).

### **Scholarships and Awards:**

- **(2014)** first place at Western Industry Problem Solving Week (IPSW), Western University, Ontario, Canada.
- **(2014 – 2015)** ) Postdoctoral fellow (by grants of Prof. M. Davison), Department of Statistical and Actuarial Sciences, Western University. Value \$40,000
- **(1/2013 - 06/2013)** Postdoctoral fellow (by grants of Prof. B. Collins and Prof. M. Alvo), Department of Mathematics and Statistics, University of Ottawa. Value \$17,000
- **(2013 – 2014)** nominated as best Ph.D. thesis, University of Ottawa, Ontario, Canada.
- **(2013)** Dean's Scholarship (University of Ottawa). Value \$2,500
- **(7/2012 - 12/2012)** NSERC (by grants of Prof. B. Collins and Prof. D. McDonald). Value \$11,000
- **(Summer 2012)** Canadian Mathematical Society (CMS). Value \$500
- **(Summer 2012)** University of Ottawa conference travel grant. Value \$1000
- **(1/2012 - 06/2012)** Early research award (ERA) (by Prof. B. Collins). Value \$9,000
- **(Summer 2008)** Nipissing University \$500
- **(1/2008 - 11/2011)** National Scholarship from the Egyptian Government Value \$120,000
- **(9/1996 - 06/1999)** Excellence rewarding for undergraduate students, Helwan University, Cairo, Egypt

### **List of Teaching and Teaching Assistant Courses:**

#### **Qassim University, KSA (2018 – 2019)**

Real analysis I, Real analysis II, Rings and fields, Group theory, Calculus, Mathematical applications on computers, Mathematical history.

#### **Helwan University, Cairo, Egypt(2015 – 2017)**

Social Statistics, Probability and Statistics, Sampling analysis, Time Series analysis, Multivariate Statistics, Biostatistics, Data analysis.

**University of Ottawa, Ontario, Canada (2009 – 2014)**

Calculus for the Life Sciences I, Mathematical Methods I, Introduction to Biostatistics, Mathematical Methods II, Calculus II, Calculus III for Engineers, Linear Algebra.

**Helwan University, Cairo, Egypt(1999-2007)**

Mathematical Analysis (1), Analytical Geometry(1) & Higher Algebra,  
Mathematical Analysis (2), Analytical Geometry(2) & Linear Algebra,  
Mathematical Analysis (3), Statistics, Calculus, Functional analysis, Numerical analysis.