Ola El-Araby Hassan Abd El-Aziz

Personal Data

Date of Birth:	21 August 1985
Place of Birth:	Alexandria, Egypt
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Education

Feb. 2019	Doctor of Philosophy in Engineering Mathematics, Dept. of Engineering Mathematics and Physics, Faculty of Engineering **Alexandria University**, Egypt Pre - PhD GPA: 3.9
Thesis:	"Application of Hilbert Transform as an Induction motor fault detection technique"
April 2013	Master Degree of Science in Mobile Communication Dept. of Electrical Engineering, Faculty of Engineering **Alexandria University**, Egypt Pre - Master GPA: 3.78
Thesis:	"Schemes of Relaying in cellular system to improve Capacity, Coverage and Throughput"
July 2007	Bachelor's degree in Electronics and Electrical Communications engineering, Dept. of Electrical Engineering, Faculty of Engineering **Alexandria University**, Egypt
Graduation project title	"Physical Layer and Dimenssioning of UMTS Network"
Grade	Excellent

Current Occupation

Sep. 2021 - present	Assistant Professor, Department of Basic and Applied Science, Arab Academy for Science, Technology and Maritime Transportation (AAST), Smart village Campus, Egypt

Work Experience

Jan. 2020 - Aug. 2021	Adjunct Assistant Professor, Department of Mathematics Zewail City of Science and Technology (ZC), Giza, Egypt
Feb. 2019 - Aug. 2021	Adjunct Assistant Professor Department of Basic and Applied Science, Arab Academy for Science, Technology and Maritime Transportation (AAST), Egypt
Sep. 2019 - Oct. 2020	Assistant Professor Department of Basic and Applied Science, Alexandria Higher Institute of Engineering and Technology (AIET), Alexandria, Egypt
Sep. 2016 - Dec. 2018	Assistant Lecturer, Department of Mathematics Zewail City of Science and Technology (ZC), Giza, Egypt
Sep. 2007 - June 2016	Teaching Assistant, Department of Basic and Applied Science, Arab Academy for Science, Technology and Maritime Transportation (AAST), Alexandria, Egypt

Languages

Arabic:	Mother tongue
English:	Fluent
French:	Basic Knowledge

Online Teaching tools experiences

- Moodle Platform.
- Google Classroom.
- Microsoft Team.

Computer Skills

Excellent Knowledge:	Matlab, LaTeX, SPSS, Prezi, Office package.
Intermediate Knowledge:	R, Python, Proteus, Multisim, Visio

Interests and Activities

- Technology, Programming, Data Analysis.
- Reading, Travelling

Community Service

Member of Rotary Organization for almost three years; Rotary Club of Alexandria East; Participating in several community activities such as blood donation campaigns, polio vaccination campaigns, awareness campaigns against illiteracy and many general medical screening convoys.

List of taught courses

Faculty of Engineering:

Calculus I	Basics of differentiation, partial differentiation, chain rule, parametric differentiation, implicit differentiation, growth rate, conic sections.
Calculus II	Basics of integration, double and triple integration, applications of integration, Sequence and series, polar coordinate, lines and planes.
Vectors and Complex	Vector algebra in two and three dimensional space, Gradient, Divergence and Curl of a vector field, Green's theorem, surface integral, Gauss theorem, Stokes's theorem, Complex numbers and planes, complex functions and differentiation, line complex integral, Zeros and poles of analytic functions, Residue theorem, Fourier integral.
Ordinary Differential Equations	Solving first and second differential equations, Non-homogeneous DE, Variable coefficient DE, Laplace transform, inverse Laplace transform, Fourier series.
Partial differential Equations	Series solution of differential equation, Special functions, Solving partial differential equations in different coordinates, conformal mapping.
Numerical Analysis and Matlab	Approximation and Error Types, Roots of Nonlinear Equations, Linear Algebraic Equations, Curving Fitting, Numerical Differentiation and Numerical Integration, Numerical solutions to ordinary Differential Equations, Numerical solutions to partial Differential Equations, Optimization.
Probability and Statistics	Frequency distribution, general measurement tendency, Probability , discreet and continuous random variable, statistical distributions, correlation and regression.

Faculty of Business:

Math I	geometry, determinant and matrices, Linear programming.
Math II	Rules of differentiation, basics of integration and financial application.
Statistics	Probability , discreet and continuous random variable, statistical distributions, Descriptive statistics.
Inferential Statistics	Confidence Intervals, Testing of Hypothesis, Parametric and Non-Parametric test, Correlation, and Regression.

Administrative work

- Preparing admission exams question bank.
- Preparing schedule time table.
- Accreditation filling.
- Final exam control work.
- Participating in organizing conferences.

List of Publications

Num. of Citation	283
h-index	4
Feb. 2023	Mohamed G. Abd El Ghafour, Ahmed H. Abd El-Malek, Ola E. Hassan, Mohammed Abo-Zahhad, "Interference-aware modeling and analysis for the secrecy performance of cooperative vehicular relaying networks over mixed Nakagami-m and double Nakagami-m fading channels", Ad Hoc Networks, Vol. 139 (2023), pp. 103023,
Decp. 2022	Mohamed G Abd El Ghafour, Ahmed H Abd El-Malek, Ola E Hassan, Mohammed Abo-Zahhad, Secrecy Outage Probability of Full-Duplex Relaying Vehicular Networks, 2022 10th International Japan-Africa Conference on Electronics, Communications, and Computations (JAC-ECC), pp. 98-103, Dec. 2022.
Feb. 2022	Hassan O, Zakzouk N, Abdelsalam A. Novel Photovoltaic Empirical Mathematical Model Based on Function Representation of Captured Figures from Commercial Panels Datasheet. Mathematics. 2022; 10(3):476
Decp. 2020	O. E. Hassan, and A. K. Abdelsalam, New Time Horizon Based Classification of PV Power Generation Forecasting Techniques, 2020 30th International Conference on Computer Theory and Applications (ICCTA), 12—14 Dec. 2020.
Sep .2018	M. B. Abd-el-Malek, A. K. Abdelsalam, and O. E. Hassan, Novel Approach Using Hilbert Transform for Multiple Broken Rotor Bars Fault Location Detection for Three Phase Induction Motor, ISA Transactions®, vol. 80, pp. 439-457, Sep. 2018.
Aug. 2018	Ola E. Hassan, M. Amer, Ahmed K. Abdelsalam, and Barry W. Williams, "Induction motor broken rotor bar fault detection techniques based on fault signature analysis a review," IET Electric Power Applications, vol. 12, pp. 895-907, August 2018.
Sep. 2017	Mina Abd-el-Malek, Ahmed K. Abdelsalamc, Ola E. Hassana, "Induction Motor Broken Rotor Bar Fault Location Detection through Envelope Analysis of Start-up Current using Hilbert Transform," Mech. Syst. Signal process. vol. 93, pp. 332-350, Sep. 2017
Sep. 2012	Ola E. Hassan, "Relaying Schemes for Improving Coverage and Capacity In cellular system with Selectable User Equipment", Journal of Selected Areas in Telecommunications (JSAT), Sep. 2012, "http://www.cyberjournals.com/Papers/Sep2012/04.pdf"

Attended Workshops and Conferences

Dec. 2020	30^{th} International Conference on Computer Theory and Applications (ICCTA 2020) (Dec. 12-14 2020), Arab Academy for Science, Technology & Maritime Transport (AASTMT), Egypt
July 2017	Workshop on Numerical Techniques for Partial Differential Equations (July 10-14 2017), mathematics department, Visvesvaraya National Institute of Technology (VNIT), Nagpur, India.
Feb. 2017	6^{th} International Conference on Mathematics and Information Sciences (ICMIS-17), Zewail City of Science and Technology, Egypt

List of research grants awarded

2020 – 2022	"Securing the Vehicular Internet-of-Things (VIoT) in Smart Cities" - STDF - Young Researcher Grant with total fund of 1,390,000 EGP
Project aim	IT aims to study the impact of mobility and eavesdropping attacks on the secrecy performance of IoT systems. Theoretical and simulations results for different IoT network topology will be addressed and a practical test-bed will be implemented to compare the practical results with theoretical ones. Therefore, the proposed test-bed will be generalized to study the IoT technologies in 5G networks.
Project team	Egypt-Japan University of Science and Technology (E-JUST)

Teaching Philosophy

My philosophy in teaching is to deliver a guide line to the way of thinking not abstract information. Also I prefer to declare the main concept not only stating the different concluded cases of any topic in order to present the base of any theory.

As my major is mathematics I depend on explaining the general and basic concept of the solution methodology which is more sufficient than stating solution steps. Relating the mathematical topics to real life problems is very important to help the students to understand the mathematical concept.

Interaction is needed in the tutorial so it is very helpful to let the students act as instructor and explain the problems to the rest of the class. Another way of interaction which achieves a good impact too is dividing the class into groups and let them discuss with each other.

Research Statement

As my background in study is electrical engineering and my current major of study is mathematics so my research field is applied mathematics in modeling and analysis of engineering applications specially renewable energy. I started after awarding my doctoral degree to work in the field of applications of data science and Internet of things for renewable energy and Mobile communication.

Mathematics is a common factor in many research work as for any problem we need mathematical modelling, numerical solutions, solving differential equation, signal processing and statistical analysis. My agenda for current research is considering the field of data science and data analysis. This field is very important for several applications like medical, economical and finance.

My approach in research is to deliver optimum analysis and working on enhancing and develop algorithm to improve the performance of current systems or to solve the problems in real life in the fields of industry and renewable energy.