Mohamed Donia

Data Scientist

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EDUCATION

Master of Science, The University of Edinburgh (Sep 2018 – Sep 2019)

Program: Computational Applied Mathematics MSc.

Grade: Distinction (expected)

Coursework:

- Python Programming
- Statistical Learning
- Numerical ODEs
- Scientific Computing
- Bayesian Data Analysis
- Numerical PDEs
- Fundamentals of Optimization
- Numerical Linear Algebra
- Research Skills in Data Science

Bachelor of Science, the American University in Cairo (Sep 2009 – Dec 2013)

Major: Mechanical Engineering BSc.

GPA: 3.58/4.0 with Honors.

General Secondary Certificate, Al-Haram Secondary School, Giza, Egypt, 2009

Score: 100%

LINGUISTIC AND COMPUTER SKILLS

Excellent knowledge of both spoken and written *Arabic* and *English* and basic knowledge of *French*.

Skill	Level		Skill	Level		Skill	Level
Python	■■■■■		**Tableau**	■■□□□		**SolidWorks**	■■■■■
MATLAB	■■■■■		**MS Excel**	■■■■□		**ANSYS-CFX**	■■■□□
R	■■■□□		**SPSS**	■□□□□		**ANSYS-FLUENT**	■■■□□
LaTeX	■■■□□		**T-SQL**	■□□□□		**ABAQUS**	■■□□□

AWARDS AND HONORS

Chevening Award, The University of Edinburgh, August 2018
A UK government full tuition scholarship and monthly stipend for one-year master's degree.

Egyptian Public-School Scholarship, The American University in Cairo, August 2009
Full tuition scholarship for outstanding secondary school academic record.

AUC Dean's List – Fall 2009 to Fall 2013
Academic achievement.

PUBLICATIONS

- Magdi Yacoub, **Mohamed Donia**, Amr El Sawy, Ramy Doss, Amir Samaan, Mohamed Abdelkhalek, Mohamed Hosny, Pedro Morais, Soha Romeih, Yasmine Aguib, Jan Bogaert, Ahmed El Guindy, and Heba Aguib. *Improvement in Systolic and Diastolic Right Ventricular Function Following Left Ventricular Myectomy for HOCM.* Abstract in American Heart Association (2018).
- Magdi Yacoub, Heba Aguib, Mazen Abou Gamrah, Nairouz Shehata, Mohamed Nagy, **Mohamed Donia**, Yasmine Aguib, Hesham Saad, Soha Romeih, Ryo Torii, Ahmed Afifi, and Su-Lin Lee. *Aortic root dynamism, geometry, and function after the remodeling operation: Clinical relevance.* The Journal of Thoracic and Cardiovascular Surgery (2018).
- Ramy Imam, Mohamed Yassin, **Mohamed Donia**, and Ahmed Atiya. *Solar Thermal Power Generation Using a Double Concentration on a Dish Collector.* ASME International Mechanical Engineering Congress and Exposition, Volume 6A: Energy (2014).

WORK EXPERIENCE

Research Scientist, Aswan Heart Centre, Magdi Yacoub Foundation.
October 2016 – September 2018
- Computationally model the blood flow in the left ventricle using CFD techniques.
- Shape optimization of the left ventricle through machine learning algorithms.
- Analyze the morphology of the left ventricle and aorta using MATLAB codes and image processing tools.
- Statistical strain analysis of the Hypertrophied Cardiomyopathy (HCM) patients.

Junior Design Engineer, Tercel Oilfield Products.
May 2014 – July 2016
- Automate the modeling process through techniques of programming.
- Develop adequate CAD designs for the products.
- Implement engineering analyses and simulations for the company products' existing and conceptual designs, i.e. Finite Element Analysis (FEA), Computational Fluid Dynamics (CFD), Multi-Body Dynamics Simulation (MBD)
- Assist in managing the process of product development in compliance to market requirements and international standards (drilling enhancement tools).
- Execute product data management system.
- Undertake the necessary measures to ensure proper engineering documentation is maintained.

Teaching Assistant (Dynamics), Mechanical Engineering Department, the American University in Cairo.
February 2014 – May 2014
- Explain the challenging concepts of engineering dynamics.
- Assist the students in applying their knowledge at solving problems.
- Assess the students understanding by grading assignments and quizzes.

PROJECTS AND WORKSHOPS

- Barclays Counterparty Credit Risk Monte Carlo Simulation (Feb 2019)
- Computational Experimental Design for Optimized Decisions Based on Historical Data (Nov-Dec 2018):
  - Case 1: Quality Control Policy.
  - Case 2: Inventory Management Policy.
- K-Nearest Neighbours Machine Learning Algorithm Implementation (Oct 2018)
- Edinburgh Bikes Hire Data Analysis (Dec 2018)
- Shakespeare's A Midnight Summer's Dream Text Analysis (Dec 2018)
- Numerical Methods Implementation (Jan-Feb 2019):
  - Hamiltonian dynamics of a spring-double pendulum system Using Euler's and Explicit Midpoint methods.
  - Small cluster of atoms simulation in vacuum using Symplectic methods.
  - Brownian dynamics simulation using Euler-Maruyama method.
  - Langevin dynamics simulation and using it in a Data Science Bayesian Inference Sampling Problem
  - Biological Arms Race Numerical Solutions using Euler's and Runge-Kutta methods.
- Optimization Problems (Sep-Oct 2018):
  - The bin packing problem.
  - The travelling salesman problem.

SELF-LEARNING AND AUDIT

Discrete Mathematics, The American University in Cairo.

Accelerated Natural Language Processing, University of Edinburgh

Applied Machine Learning, University of Edinburgh

Philosophy of Linguistics, University of Edinburgh

PERSONAL INFORMATION

Date of Birth   : 3rd August 1992
Place of Birth   : Cairo, Egypt
Nationality   : Egyptian
Military Status   : Exempted

REFERENCES FURNISHED UPON REQUEST