Mohamed ElMikaty

BSc, MSc, PhD, DIC

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I build and develop Image Processing, Computer Vision and Machine Learning Applications for real-life scenarios with a motto of "Humans can see, recognise and decide, so can Computers"

WORK EXPERIENCE

2016 – Now **Research Associate, Imperial College London, UK**

(Aug – Now) I work in a team on 3D LiDAR data landmark detection and classification using deep learning, being programmed in Python using TensorFlow. I also co-advise MSc and MEng students on their individual research projects.

2016 – 2016 **Research Assistant, Imperial College London, UK**

(Jun – Jul) I studied the use of the state-of-the-art deep neural networks for the classification of 2D images, programmed in Python.

2016 – 2016 **Research & Development Engineer (Part-Time), Oxehealth Limited, UK**

(Jan – May) I worked in a team on the development a system that measures vital signs using IR cameras for patients in hospitals and detainees in police cells, meeting two different sets of customer requirements, programmed in C++ using OpenCV.

2013 – 2015 **Graduate Teaching Assistant (Part-Time), Imperial College London, UK**

(Oct – Dec) I demonstrated and evaluated course work for Advanced Communications and Signal Processing Laboratory (Image Processing) and Communication Systems modules. I also co-advised MSc and MEng students on their individual research projects.

2014 – 2014 **Industrial Placement Intern, BAE SYSTEMS Military Air and Information, UK**

(Jan – Feb) I investigated the ability to predict the performance of object-recognition algorithms in a lieu of professional work with the Research and Development team, programmed in MATLAB.

2012 – 2012 **Research Intern, University Defence Research Centre, Imperial College London, UK**

(Sep – Nov) I developed a system for the detection of humans using standard cameras and low cost depth-range sensors on a multi-level basis, programmed in C++ using OpenCV.

2010 – 2011 **Image Processing Engineer (Part-Time), Middle East Technology, Egypt**

(Jun – Feb) I worked in a team on the development of a virtual changing room. Within a customer's tight budget, we used an HD webcam to develop user-friendly software to enable customers try on many models with a few hand moves, programmed in C++ using OpenCV.

2009 – 2011 **Teaching Assistant, Mansoura University, Egypt**

(Sep – Oct) I demonstrated and evaluated course work for Digital Image Processing, Digital Signal Processing, Computer Architecture and other modules. I also co-advised BSc students on their final-year projects.

EDUCATION AND QUALIFICATIONS

2012 – 2016 **PhD, DIC, Electrical Engineering (Image Processing / Computer Vision)**

(Nov – May) **Imperial College London, UK**

Research Topic: Image Analysis (Target Detection), sponsored by EPSRC in collaboration with BAE SYSTEMS Military Air and Information, UK

Thesis: Robust Detection and Localisation of Cars in Airborne Imagery

I developed robust systems for the detection and localisation of cars in high-resolution pan-sharpened aerial images of urban scenes, used discriminative and generative classifiers, programmed in MATLAB.

2011 – 2012 **MSc, DIC, Communications and Signal Processing, Distinction**

(Oct – Sep) **Imperial College London, UK**

Individual Project: "Human Tracking by Detection", in collaboration with SELEX Galileo Ltd & University Defence Research Collaboration, Imperial College

I developed a system for the detection and tracking of humans in RGBD images of heavily-cluttered environments, used clustering and discriminative classifiers, programmed in C++ using OpenCV.

2004 – 2009 (Sep – Jul)
BSc, Electronics and Communications Engineering, Excellent (Honours), 2nd of 250
Mansoura University, Egypt

Final Year Project (Group Work): "Eye Mouse", sponsored by Intel Cooperation, Egypt

I participated in the design of a tracking system for gaze using a webcam to determine the location of user's iris in relation to the rest of the eye to position a computer cursor, used discriminative classifier, programmed in C++ using OpenCV.

2001 – 2004 (Sep – Jun)
General Secondary Education Certificate, Achieved 100%
Mansoura Language School, Egypt

Subjects: Mathematics, Physics, Chemistry, English and French.

I was ranked among top 100 students in whole of Egypt and 1st in Dakahlia Governorate.

PRIZES AND AWARDS

- Machine Learning Summer School Scholarship, CMU, USA 2014.
- Industrial CASE EPSRC full PhD Studentship Award sponsored by BAE systems, UK 2012.
- Department PhD Fees Bursary, Department of Electrical and Electronic Engineering, Imperial College, UK 2012.
- Ivor Tupper Prize for 'Excellence in Signal Processing, Broadcast and Video Technology', UK 2012.
- CCSF Full Scholarship Award for MSc studies, Egypt 2011.
- Young Innovators Award (YIA) for engineering final year projects, Egypt 2010.
- Fifth Rank Prize in Made In Egypt Competition (MIE), Egypt 2009.
- Higher Education Enhancement Project Fund Prizes for Top Students at the Department of Electronics and Communications Engineering, Mansoura University, Egypt 2005, 2006.
- MFK Foundation Full Studentship Award for undergraduate studies, Egypt 2004.
- Top 100 Students Prize in General Secondary Certificate (GSC) in whole of Egypt 2004.

ACADEMIC AND PROFESSIONAL TRAININGS

- Faro Focus3D Hardware and Software, Empresa Brasileira de Pesquisa Agropecuária, Brazil 2017.
- Linux/Unix Programming, Imperial College London, UK 2015.
- Mini MBA, introductory courses in business and administration, Imperial College London, UK 2015.
- Machine Learning Summer School, Carnegie Mellon University, USA 2014.
- Graduate Teaching Assistant Training Programme, Imperial College London, UK 2013.
- Visual Recognition and Machine Learning Summer School, École Normal Supérieure, France 2013.
- Summer School Research Skills Development course, Imperial College London, UK 2013.
- International Computer Vision Summer School Sicily, Italy 2012.
- Undergraduate Industrial Training Programmes: Alcatel-Lucent, Egypt 2008, Egyptian Satellite Co. (NileSat), Egypt 2008, Egyptian company for Mobile Services (MobiNil), Egypt 2007 and Higher Education Enhancement Project Fund, Mansoura University, Egypt 2006.

TECHNICAL SKILLS

Software:

- Very Good in: MatLab, C/C++11, Python, OpenCV library, TensorFlow library
- Familiar with: Java, VB.net, Assembly
  LabView, Electronics, Workbench, MultiSim
  HTML, Dreamweaver
  Git, Agile Environment

Languages:

- Arabic: Native
- English: Fluent
- French: Fluent (Diplôme d'Études en Langue Française (DELF) B2)

PROFESSIONAL ACTIVITY

- IEEE member, IET member
- BMVA member, IAPR Affiliate
- Referee for EUSIPCO 2013, 2014