Ahmad Al-Kabbany

Associate Professor of Electronics and Communications Engineering, Arab Academy for Science and Technology
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LinkedIn

Education

University of Ottawa — Sept. 2010 – Jul. 2016
Ph.D. - Electrical and Computer Engineering
Recipient of the International Admission Scholarship

Arab Academy for Science, Technology and Maritime Transport, Egypt - aast.edu — Sept. 2005 - Jan. 2008
M.Sc. Student - Electronics and Communications Engineering - Grade: Excellent
Recipient of the Graduate Studies Tuition Waiver

Arab Academy for Science, Technology and Maritime Transport, Egypt - aast.edu — Mar. 2000 - Mar. 2005
Honours B.Sc. - Electronics and Communications Engineering
Recipient of the Distinction Scholarship

Academic Research Experience

Arab Academy for Science, Technology and Maritime Transport, Egypt - aast.edu — Sept. 2016 - Present
Assistant Professor

- My research interests are in the areas of machine learning-based image analysis, image synthesis, image processing, and image communication, with current focus on immersive technologies, action recognition, scene understanding, image/video matting and object/semantic segmentation.

University of Ottawa - Prof.Robert Laganiére
Postdoctoral Research Fellow — May 2016 - Oct. 2017

- Explored the problem of color naming through inductive/transductive semi-supervised machine learning techniques.

University of Ottawa - Prof.Eric Dubois
Ph.D. Student / Graduate Student Researcher — Sept. 2010 - Apr. 2016

- Explored graphical and machine learning methods for robust object segmentation (natural image matting) in images and video sequences.
- Developed techniques that are based on graph theory and mathematical optimization for the robust management of dis-occlusions in novel view synthesis.

Honours and Awards

1. Nominated by MO4 Network, a leading media agency in the middle east, among the most impactful and inspiring 17 Egyptians in 2017 — Dec. 2017
2. Placed first of the Electrical Engineering section at the uOttawa Faculty of Engineering's Graduate Research Poster Competition [Poster] — Mar. 2015
3. Placed first of the Electrical Engineering section at the uOttawa Faculty of Engineering's Graduate Research Poster Competition [Poster] — Mar. 2013
4. Recipient of the International Admission Scholarship, University of Ottawa — Sept. 2010

Selected Publications

Rehan Youssef, Aliaa, Mohammed Gumaa, and Ahmad Al-Kabbany. "Necknasium: A Virtual Reality Rehabilitation Game for Managing Faulty Neck Posture." *arXiv e-prints* (2023): arXiv-2312.

Mahmoud, Rojaina, Mona Mamdouh, Omneya Attallah, and Ahmad Al-Kabbany. "Stress Management Using Virtual Reality-Based Attention Training." *arXiv preprint arXiv:2312.06025* (2023).

Mamdouh, Mona, Rojaina Mahmoud, Omneya Attallah, and Ahmad Al-Kabbany. "Stress Detection in the Wild: On the Impact of Cross-Training on Mental State Detection." In *2023 40th National Radio Science Conference (NRSC)*, vol. 1, pp. 150-158. IEEE, 2023.

El-Bana, Shimaa, Ahmad Al-Kabbany, Hassan M. Elragal, and EL-Khamy Said. "Evaluating the Potential of Wavelet Pooling on Improving the Data Efficiency of Light-Weight CNNs." *IEEE Access* (2023).

El-bana S, Al-Kabbany A, Sharkas M. 2020. A multi-task pipeline with specialized streams for classification and segmentation of infection manifestations in COVID-19 scans. PeerJ Computer Science 6:e303 https://doi.org/10.7717/peerj-cs.303

Gendy, M.E., Al-Kabbany, A. and Badran, E.F., 2020. Maximizing Clearance Rate of Budget-Constrained Auctions in Participatory Mobile CrowdSensing. IEEE Access.

EL-Bana, S., Al-Kabbany, A. and Sharkas, M., 2020. A Two-Stage Framework for Automated Malignant Pulmonary Nodule Detection in CT Scans. Diagnostics, 10(3), p.131.

A.Badawi, **A.Al-Kabbany**, and H.Shaban, "Multimodal Human Activity Recognition From Wearable Inertial Sensors Using Machine Learning," IEEE EMBS CONFERENCE ON BIOMEDICAL ENGINEERING AND SCIENCES (IECBES), 2018

R.Laganiere, D.Pang, and **A.Al-Kabbany**, "Color Reduction Using Human Categorical Perception," in Proc. **ICIP**, September 2017

A. Al-Kabbany and E. Dubois, "Matting with Sequential Pair Selection Using Graph Transduction," in Proc. International Symposium on Vision, Modeling, and Visualization, October 2016, Bayreuth, Germany. *Ranked 8th in the international matting benchmark on the 18th of June 2016.* (alphamatting.com)

Professional and Volunteering Activities

Founder - CEO — Feb. 2017 - Present
VRapeutic - LinkedIn Page
VRapeutic (vee-rapeutic) is a research-based scaleup specializing in developing AI-enabled therapeutic software using immersive technologies..

Founding Member Apr. 2018 - Present

Intelligent Systems Lab - LinkedIn Page

Founded in 2018 within the Department of Electronics and Communications Engineering at the Arab Academy for Science and Technology. We conduct research in intelligent and autonomous systems, image and video processing, computer vision, image synthesis, and immersive technologies.

Founder and Head of Organizing Committee Mar. 2017 - Present

Alexandria AR/VR Meetup - Facebook Page

The first social initiative by VRapeutic, and the first AR/VR meetup in Egypt. We create opportunities for networking, employment, investment, and the flourish of the Egyptian entrepreneurial scene in those emerging fields.