

Mohamed Abdelhack PhD.

Work/Research Experience

Machine Learning Research Associate (Postdoctoral)

11/2019 – Present

Washington University in St. Louis

- Currently building a machine learning-based operation room support system to predict different medical risk factors in real-time. The system is expected to cover at least 3 major hospitals in St. Louis area.

Machine Learning Researcher

10/2018 – 03/2019

Kyoto University Hospital

- Spearheaded a cross-functional collaboration with clinical psychiatrists leading to the discovery of impairments in visual processing in Schizophrenia.
- Planned, devised, and undertook two complete sets of experiments, analyzed their results and presented the results in 2 international conferences.
- Guided the MRI operation and managed the experiment database constructing a dataset of over 200 hours of brain activity measurements currently utilized to prepare 3 publications.

Project Management

10/2015 – 09/2018

As a Graduate Research Assistant in Kyoto University

- Self-initiation of a complete research project including strategic planning, data collection and analysis culminating in a novel machine/deep learning-based analysis algorithm that inspired a new collaboration and secured ¥4.5 M in personal funding and over ¥60 M in lab's funding.
- Authored 2 publications and further proofread 8 other publications for other lab members.
- Trained 5 international students including assisting them with settling in Japan and arranged a deep learning study group among several research groups.

Research Assistant – Image Processing for Microscopy

09/2012 – 09/2015

Okinawa Institute of Science and Technology

- Conducted several cross-functional collaborations with life science researchers and professionals leading to 3 publications and 4 academic presentations in international conferences.
- Built several electronic, microscopy and software setups for image acquisition and processing that was used in 1 published project and further used by other members in their research projects.

- Product and market knowledge of microscopy and imaging equipment by developing several imaging setups.

Intern- Brain-Computer Interfacing

07/2011 – 10/2011

National Center for Adaptive Neurotechnologies

- Built a complete brain-computer interface (BCI) system using tactile stimulation including hardware and software with ~72% binary accuracy resulting in demonstrating the feasibility of using tactile stimulation in BCI technology.
- Advanced the development of the BCI2000 software suite (widely-used for BCI and cited over 1800 times) and served as a judging panel member for the BCI challenge 2011.
- Engineered an electronic tool for fault testing in electroencephalography equipment.

Education

Kyoto University (Japan)

10/2015 – 03/2019

PhD in Informatics

Neuroinformatics laboratory

Okinawa Institute of Science and Technology (Japan)

09/2012 – 09/2015

MSc. in Science and Technology

Information Processing Biology Unit

Alexandria University (Egypt)

09/2008 – 06/2012

BSc. In Electrical Engineering

Electronics and Communication Major

Programming Skills

MATLAB Python C/C++ Tensorflow/Keras Pytorch SQL

Scientific Skills

Functional Magnetic Resonance Imaging Statistical Parametric Mapping
 Fluorescent Microscopy Neuroscience Electroencephalography Machine Learning
 Image Processing

Languages

Arabic	Mother Language
English	Fluent
Japanese	Intermediate
French	Beginner

Awards and Grants

- AI Hack Tunisia Hackathon 4th place in individual track and top ten in start-up track 2019
- Japanese Government Scholarship (MEXT) 2017 – 2018
- Course fee waiver for Comp. and Cognitive Neuroscience Summer School 2017
- IEEEXtreme 5.0 programming competition Participated in a group of 3 students and achieved the following ranks: Overall: 483 Regional (Europe Africa and Middle East): 127 Egypt: 9 Alexandria University: 3 2011
- Masr El-Kheir Grant 2010
- 6th place in Competition of Robot Design Beginners Competition 2009
- 1st place in IEEE Alexandria Student Branch Presentation Contest 2009

Volunteering Activities

- Secretary general for African Association in Kyoto, Japan (AAK) 2018 – 2019
- TEDx Kyoto University [Speaker](#) 2016
- Head of [Vege Project Kyoto University](#) 2015 – 2017
- Player in the soccer team FC Junpu 2016 – 2019
- Science Talks to Okinawan Elementary and Middle Schools, Japan 2014 – 2015
- Member of the Okinawan Eisa dance team of Tancha Youth Association 2012 – 2015
- Member of Yanbaru Olympic Handball Club 2012 – 2015
- An Introduction to Interdisciplinary Science Workshop at Meio University, Nago, Japan 2012
- International Students in Okinawa Party Egyptian folk dance show 2012
- Introduction to C programming instructor (IEEE Alexandria Student Branch) 2012, 2009 (twice)
- Academic Committee member in Alexandria International Model of United Nations. Topics delivered: Communication Skills and Effective Listening, Effective Team Meeting, Human Rights and Millennium Development Goals, Annual Meetings Procedures, Critical Appraisal and Research Skills 2012
- Judging Panel Member in [Brain-Computer Interfacing HCI 2011 Challenge](#) 2011
- Volunteer in IEEE Alex. Student Branch 2010 – 2011
- Project Manager of Alexandria Engineering Model United Nations 2010
- Head of Technical Committee in Alexandria International Festival (Alex Fest) 2009