

Islam Elnabarawy

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Objective

Seeking a research and development position in the field of machine learning and computational intelligence.

Education

Ph.D. in Computer Science

Missouri University of Science and Technology
Advisor: Prof. Donald C. Wunsch II

Fall 2014–Present
Current GPA: 3.81/4.0
Expected graduation: Summer 2020

Master of Science in Computer Science

The American University in Cairo, New Cairo, Egypt
Thesis: Advanced Learning Methods and Regularization
Applied to a High Order Neural Network
Advisor: Prof. Ashraf Abdelbar

July 2013
GPA: 3.96/4.0

Bachelor of Science in Computer Science

Helwan University, Cairo, Egypt
Senior Project: Hardware-Based Face Recognition using FPGA
Senior Project Grade: Excellent (equivalent to A)

May 2007
Grade: Excellent with Honors
(cumulative, equivalent to A)

Industry Experience

Software Development Engineer II

Amazon.com, Inc.
Seattle, Washington, USA

August 2019–Present
Full-time

- Design and build a highly-scalable and highly-available software platform in the payments domain.
- Operate and support multiple critical internal services in a DevOps environment.

Machine Learning Engineer–Intern

GoGetter, Inc.
<https://gogetter.co>

May 2018–August 2018
Full-time

- Investigate state of the art supervised and unsupervised machine learning research.
- Design, prototype, and implement deep learning solutions to meet business and customer needs.

Data Scientist–Intern

Magellan Healthcare Services
Maryland Heights, Missouri, USA

May 2017–August 2017
Full-time

- Research solutions to data science problems in healthcare industry.
- Build and train machine learning models for fraud detection and prevention.
- Develop and deploy user-friendly interfaces for internal customers to use trained models.

Senior Software Engineer

Omnivoyance Software Services
Cairo, Egypt

November 2011–July 2012
Full-time

- Build web solutions using .NET 4.0, ASP.NET, Javascript, CSS3, HTML5, and WCF services.
- Database development and administration using Microsoft SQL Server 2008 R2.

Senior Software Engineer

ConnectmeTV
Cairo, Egypt

December 2009–March 2011
Full-time

- Design and develop Linux-based embedded system software modules and components.
- Develop web-based solutions using Python and the Django MVC framework.
- Write utility scripts to automate various tasks within the Linux environment.

Solution Developer

Link Development (LINKdev)
Cairo, Egypt

July 2007–November 2009
Full-time

- Design and develop web-based solutions using ASP.NET and Microsoft SQL Server.
- Development of a large e-commerce portal using Microsoft Sharepoint Server and Commerce Server.

Research Experience

Research Assistant, September 2014–Present

Applied Computational Intelligence Laboratory, Missouri University of Science and Technology

Research Assistant, February 2014–August 2014

Computer Science and Engineering Department, The American University in Cairo

Research Assistant, April 2011–May 2012

Computer Science and Engineering Department, The American University in Cairo

Teaching Experience

Instructor, Missouri University of Science and Technology (Fall 2015, Spring 2016, Fall 2016)

Courses: Introduction to C++, Tools for Computer Scientists and Engineers (Lab)

Teaching Assistant, The American University in Cairo (Winter 2014)

Course: Advanced Data Mining (graduate level)

Teaching Assistant, The American University in Cairo (Fall 2010–Summer 2013)

Courses: Computer Organization and Assembly Language Programming, Computer Architecture, Artificial Intelligence, Compiler Design, Programming in Java, Computational Intelligence, Embedded Systems, Data Mining, Introduction to Computer Programming

Technical Skills

Programming Languages: Java, Python, C/C++, C#, PHP, Matlab

Scripting Languages: Bash, Javascript, Coffeescript, Ruby

Deep Learning: Tensorflow, PyTorch, Keras

Scientific Computing: Scikit Learn, Weka, Spark/PySpark, SciPy, Pandas

Database Systems: DynamoDB, MongoDB, Cassandra, Redis, SQL Server, MySQL, SQLite

Source Control: Git, Mercurial, Subversion, Team Foundation Server

Operating Systems: Windows, Linux, Embedded Linux

Computing Platforms: Docker, Amazon AWS, Google Cloud Services, HPC Clusters

Web Development: HTML5, CSS3

Web Frameworks: ASP.NET, Wordpress, Symfony, Yii, CakePHP, Django

Javascript Libraries: jQuery, NodeJS

Game Development: Unity3d, Ogre3D, DirectX

Honors and Awards

“Rockstar Rookie” Award, Payment Services, Amazon.com, Inc. (December 2019)

ISC Graduate Research Poster Award, Missouri University of Science and Technology (October 2017)

ISC Graduate Research Symposium Award, Missouri University of Science and Technology (May 2015)

Graduate Honors Award, The American University in Cairo (Spring 2012)

Graduate Merit Fellowship, The American University in Cairo (Fall 2011–Spring 2012)

University Fellowship, The American University in Cairo (Fall 2010–Spring 2011)

Publications

Book Chapters:

Ashraf M. Abdelbar, Islam El-Nabarawy, Donald C. Wunsch, and Khalid M. Salama, “**Ant colony optimization applied to the training of a high order neural network with adaptable exponential weights**,” Applied Artificial Higher Order Neural Networks for Control and Recognition. IGI Global Press, pp. 362374, 2016, 10.4018/978-1-5225-0063-6.ch014.

Journal Papers:

Islam Elnabarawy, Leonardo Enzo Brito da Silva, and Donald C. Wunsch II, “**Embarrassingly Parallel Adaptive Resonance Theory Neural Networks for Big Data Clustering**,” IEEE Transactions on Big Data, to be submitted, 2020.

Islam Elnabarawy, Leonardo Enzo Brito da Silva, Marketa Illetskova, Daniel R. Tauritz, and Donald C. Wunsch II, "**A Study on Evolving Improved Functionality in Adaptive Resonance Theory Neural Networks using Genetic Programming Hyper-heuristics**," IEEE Transactions on Neural Networks and Learning Systems, to be submitted, 2019.

Leonardo Enzo Brito da Silva, Islam Elnabarawy, and Donald C. Wunsch II, "**A survey of adaptive resonance theory neural network models for engineering applications**," Neural Networks, vol. 120, pp. 167-203, 2019.

Leonardo Enzo Brito da Silva, Islam Elnabarawy, and Donald C. Wunsch II, "**Distributed dual vigilance fuzzy adaptive resonance theory learns online, retrieves arbitrarily-shaped clusters, and mitigates order dependence**," Neural Networks, vol. 121, pp. 208-228, 2020.

Leonardo Enzo Brito da Silva, Islam Elnabarawy, and Donald C. Wunsch II, "**Dual Vigilance Fuzzy Adaptive Resonance Theory**," Neural Networks, vol. 109, pp. 15, 2019, 10.1016/j.neunet.2018.09.015.

Islam El-Nabarawy, Ashraf M. Abdelbar, "**Advanced Learning Methods and Exponent Regularization Applied to a High Order Neural Network**," Neural Computing & Applications, vol. 25, no. 34, pp. 897910, Apr. 2014, 10.1007/s00521-014-1563-7.

Conference Papers:

Islam Elnabarawy, Wei Jiang, and Donald C. Wunsch II, "**Survey of Privacy-Preserving Collaborative Filtering**," IEEE International Joint Conference on Neural Networks, submitted, 2020.

Islam Elnabarawy, Kristijana Arroyo, and Donald C. Wunsch II, "**StarCraft II Build Order Optimization using Deep Reinforcement Learning and Monte-Carlo Tree Search**," IEEE Conference on Games, submitted, 2020.

Marketa Illetskova, Islam Elnabarawy, Leonardo Enzo Brito da Silva, Daniel R. Tauritz, and Donald C. Wunsch, "**Nested Monte Carlo Search Expression Discovery for the Automated Design of Fuzzy ART Category Choice Functions**," 2019 Genetic and Evolutionary Computation Conference (GECCO), Prague, Czech Republic, 2019, submitted.

Islam Elnabarawy, Leonardo Enzo Brito da Silva, and Donald C. Wunsch II, "**Dual Vigilance Hyper-sphere ART**," 2019 IEEE Joint Conference on Neural Networks (IJCNN), Budapest, Hungary, 2019.

Ashraf M. Abdelbar, Islam Elnabarawy, Khalid M. Salama, and Donald C. Wunsch II, "**Matrix Factorization Based Collaborative Filtering with Resilient Stochastic Gradient Descent**," 2018 IEEE Joint Conference on Neural Networks (IJCNN), Rio de Janeiro, Brazil, 2018, 10.1109/IJCNN.2018.8489528.

Ayah Helal, Enas Jawdat, Islam Elnabarawy, Ashraf Abdelbar, and Donald C. Wunsch, "**Integrated Particle Swarm and Evolutionary Algorithm Approaches to the Quadratic Assignment Problem**," 2017 IEEE Symposium Series on Computational Intelligence (SSCI), Honolulu, HI, 2017, 10.1109/SSCI.2017.8280797.

Islam Elnabarawy, Daniel R. Tauritz, and Donald C. Wunsch, "**Evolutionary Computation for the Automated Design of Category Functions for Fuzzy ART: An Initial Exploration**," 2017 Genetic and Evolutionary Computation Conference (GECCO) Companion, Berlin, Germany, 2017, 10.1145/3067695.3082056.

Islam Elnabarawy, Donald C. Wunsch and Ashraf M. Abdelbar, "**Biclustering ARTMAP collaborative filtering recommender system**," 2016 International Joint Conference on Neural Networks (IJCNN), Vancouver, BC, 2016, 10.1109/IJCNN.2016.7727578

Islam El-Nabarawy, Ashraf M. Abdelbar and Donald C. Wunsch, "**Levenberg-Marquardt and Conjugate Gradient Methods Applied to a High Order Neural Network**," 2013 International Joint Conference on Neural Networks (IJCNN), Dallas, TX, 2013, 10.1109/IJCNN.2013.6707004.

Other Publications:

Islam El-Nabarawy, “**Advanced Learning Methods and Regularization Applied to a High Order Neural Network**,” M.S. thesis, Department of Computer Science and Engineering, The American University in Cairo, New Cairo, Egypt, 2013.

Organizations and Service Activities**Missouri University of Science and Technology**

Robotics Competition Team Member - Computing Division Fall 2014–Spring 2017

Rolla Aikido Club President Fall 2015–Spring 2017

The American University in Cairo

Spring 2010 Graduate Orientation Leader Spring 2010

Helwan University

Students United member, Development Branch Spring 2004–Winter 2006

Unofficial Department Discussion Group Owner and Moderator Fall 2003–Fall 2006

Unofficial Department Website Webmaster and Forum Admin Fall 2005–Fall 2006

Extracurricular Study Group Instructor (C++, DirectX 9) Summer 2006

Professional Organizations

IEEE Student Member 2007–Present

ACM Professional Member 2009–Present

International Neural Network Society (INNS) Member 2013–Present

IEEE Computational Intelligence Society (IEEE-CIS) Member 2014–Present

IEEE-CIS Student Activities Subcommittee Member 2014–2015

IEEE-CIS Student Activities Subcommittee Vice Chair 2015–2016