

# Abdelrahman Hosny

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## Summary

I'm a data-driven software engineer carrying out research. I write code, analyze data, read latest research pieces and communicate my thoughts online/offline.

## Interests

Algorithms, Machine Learning, Deep Learning, Artificial Intelligence, Computational Biology

## Publications

<http://scholar.abdelrahmanhosny.me>

- [-] **Hosny A.** (2017) Cancer: From Biology to Computer Science XRDS: Crossroads, The ACM Magazine for Students.
- [-] Zare F., M Dow, N Monteleone, **Hosny A.**, Nabavi S. (2017) An evaluation of copy number variation detection tools for cancer using whole exome sequencing data. *BMC Bioinformatics*. doi: 10.1186/s12859-017-1705-x
- [-] **Hosny A.**, Gokhale S. (2017) Project-based Learning in a Senior-Level Probabilistic Analysis Course in the CS Curriculum. *ISEC'17*, Princeton, New Jersey.
- [-] **Hosny A.**, Vera-Licona P., Laubenbacher R., Favre T. (2016) AlgoRun, a Docker-based packaging system for platform-agnostic implemented algorithms. *Bioinformatics*. doi:10.1093/bioinformatics/btw120
- [-] Moanes A, Ibrahim A., **Hosny A.** (2016) xGame: A Novel Approach for Developing Accessible Mobile Games. *SOMET'16*, Larnaca, Cyprus. doi:10.3233/978-1-61499-674-3-315
- [-] **Hosny A.** (2016) Is Your Research Reproducible? XRDS: Crossroads, The ACM Magazine for Students. doi:10.1145/2951008

## Education

2015-2016	<i>Master's</i> – Computer Science and Engineering, University of Connecticut, Storrs, CT. GPA: A <b>Thesis:</b> Integrative analysis of heterogeneous genomics data for triple-negative breast cancer and high grade serous ovarian cancer. Online access: <a href="http://masters.abdelrahmanhosny.me">http://masters.abdelrahmanhosny.me</a>
2016-2016	<i>Graduate Certificate in College Instruction</i> , a 9-credit program for graduate-level teaching, UConn <b>Portfolio:</b> <a href="http://teaching.abdelrahmanhosny.me">http://teaching.abdelrahmanhosny.me</a>
2009-2013	<i>Bachelor</i> – Computer Science, Assiut University, Egypt. Rank: 1 <sup>st</sup> GPA: 92.51%
2008-2009	<i>High School</i> – Ranked first in Egypt, Math Section. Grade: 99.6%

## Experience

Jan. 2016-May. 2017	<i>Research Assistant</i> , Center for Quantitative Medicine, UConn Health Projects: AlgoPiper, TURING
Jan. 2015-Dec. 2016	<i>Teaching Assistant</i> , Computer Science and Engineering, University of Connecticut Courses: Statistical Analysis of Computer Systems, Algorithms & Complexity, Cloud Computing
Summer 2016	<i>Research Intern</i> , Sheida Nabavi Lab, University of Connecticut Project: CNV-Sim
Jan. 2015-Dec. 2015	<i>Research Assistant</i> , Center for Hardware Assurance, Security and Engineering, Electrical and Computer Engineering, University of Connecticut Project: Anomalous behavior detection through real-time analysis of log files
Summer 2015	<i>Research Intern</i> , Center for Quantitative Medicine, UConn Health. Project: AlgoRun
Oct. 2013-Dec. 2014	<i>Teaching Assistant</i> , Computer Science, Assiut University, Egypt Courses: Introduction to Object Oriented Programming using Java, Compilers Theory
Summer 2012	<i>Software Engineering Intern</i> , ITWorx, Cairo, Egypt Project: School Management System using Microsoft SharePoint technology

## Honors and Awards

- 2015 UConn Graduate Student Intern of the Year Honorable Mention, University of Connecticut, USA
- 2013 One of Top 10 Debaters Medal and Award, 2<sup>nd</sup> International Universities Arabic Debating Championship, Al Doha, Qatar
- 2010 One of Top 10 Math Competitors, AUC Math Competition, Cairo, Egypt.
- 2009 Coca-Cola Education Award, Assiut Governorate shield, Assiut Municipal Council shield Teachers Association in Assiut shield

## Featured Projects

- 2017 MeSHgram – NCBI Hackathon, NLM, NIH, Washington DC [link: <https://github.com/NCBI-Hackathons>] A web-based tool to visually browse co-occurrence of MeSH terms in PubMed.
- 2016 *Integrative Analysis of heterogeneous genomics data for TNBC*, Master's Thesis Identifying candidate biomarkers for drug resistance in heterogeneous breast cancer data.
- 2016 *CNV-Sim*, main contributor [link: <https://nabavilab.github.io/CNV-Sim>] Simulating copy number variations in whole genome and targeted sequencing.
- 2016 *TURING*, main contributor [link: <http://www.discretedynamics.org/>] A crowd-sourced platform for algorithms focused on time- and state-discrete dynamical systems.
- 2016 *AlgoPiper*, main contributor [link: <http://algotiper.org/>] A visual tool to create pipelines based on AlgoRun packaging system.
- 2016 *Deep learning models on Saccharomyces Cerevisiae*, main contributor [link: <http://abdelrahmanhosny.github.io/DL-Cerevesiae/>] Confirming DNA origins of replication in Cerevisiae genome using deep learning models.
- 2015 *AlgoRun*, main contributor [link: <http://algorun.org/>] A Docker-based packaging system for platform-agnostic implemented algorithms.
- 2015 *xGame*, solution architect [link: <http://xgameapp.com/>] A mobile game engine for audio-only accessible games.
- 2015 *Implementing a caching scheme for media streaming in a proxy server*, main contributor [report: <http://www.slideshare.net/AbdElRahmanHosny1/final-report-48969463>] Unlike CDNs, which require huge infrastructure, the implemented caching proxy server is as simple as a piece of software that is portable and can be installed in small as well as large scale. Tested on GENI.
- 2015 *Bank Operations Multi-agent System using JADE*, main contributor [link: <https://github.com/abdelrahmanhosny/multi-agent-system>] Using Java Agent Development framework, we implemented a smart recommendation system for bank operations across multiple branches.
- 2014 *Badminton Trainer SW*, main contributor [link: <https://github.com/abdelrahmanhosny/badminton-trainer-software>] The goal is to help in teaching basic skills of badminton using Microsoft Kinect sensor.
- 2013 *DevOS*, senior design project An integrated web-platform for developers that provides them with a complete and ready-to-use environment (Infrastructure, OS, IDEs), remotely accessible from anywhere through a browser
- Others Check <http://github.abdelrahmanhosny.me>

## Skills

Research, Biology, Cancer Genomics, Genetics, High-throughput data analysis, RNA Sequence Analysis, Differential Expression, Genomic Variation Analysis, Python, R, Bioconductor, Galaxy, Learning Algorithms, Classification Algorithms, Shell Scripting, Cluster Computing, Docker, Django, NodeJS, Apache Spark, Git, GENI, Linux Server Administration, Web Apps Development, Object Oriented Programming using C++, Java and C#, Implementing Data Structures and Algorithms, xBox Kinect Programming, Microsoft SharePoint, Microsoft .NET technology stack, Networking and Parallel Computing, HTML, XML, JSON, SQL, Oracle VirtualBox API, Software Engineering, Design patterns, DFDs, ERDs, UML Diagrams, Use Cases, IT Project Management

## Organizations

A student member in IEEE and ACM since 2010

## Blogging

Author on the following blogs:

- ACM XRDS blog: <http://xrds.acm.org/blog/author/abdelrahman/>
- Nabavi Lab blog: <https://nabavilab.github.io/>
- xWare Integrated Solutions blog: <http://thoughts.xware.co/>
- Personal blog: <http://blog.abdelrahmanhosny.me>

## Conferences and Certification

May 2016 Docker ContainerDays at Microsoft New England  
April 2016 *Speaker* at Docker Boston Meetup. Talk link: <http://bit.ly/algorun-talk>  
March 2016 *Mentor* at Docker Birthday #3, Boston, MA  
November 2015 Harvard Arab Weekend, Boston, MA  
January 2013 International Software Testing Qualifications Board (ISTQB) – Foundation

## Test Scores

October 2016 TOEFL iBT 105 (reading: 26, listening: 25, speaking: 24, writing: 30)  
March 2014 GRE (verbal reasoning: 142, quantitative reasoning: 164, analytical writing: 3.5)

## Volunteering

Feb. 2016-Present *Webmaster* at IEEE Connecticut Section  
Activities: maintain and update all website content of IEEE CT Section.  
November 2013 *Team Coach* at ACM Arab Collegiate Programming Contest (ACPC), Egypt  
Activities: mentored a team of programmers to solve programming challenges  
Aug. 2012 - May 2013 *Microsoft YouthSpark Leader*, Microsoft Citizenship, Egypt  
Activities: planned social projects that promote entrepreneurship  
trained students on job market soft skills.  
Jan. 2011 - May 2013 *Microsoft Student Partner* at Microsoft Egypt  
Activities: founded and lead Microsoft tech-club at Assiut University  
delivered technical sessions evangelizing Microsoft technologies  
contributed to Microsoft Windows 8 Launch in Egypt  
competed in Microsoft Imagine Cup 2012  
Aug. 2011 - May 2012 *President*, Alashanek Ya Balady for Sustainable Development, Assiut Franchise  
Activities: started R&D processes to support poor people in the city  
formulated youth development and micro loans programs  
Aug. 2010 – May 2011 *Scientific Committee Head*, Student Union, Faculty of Computers & Information  
Activities: contributed to a country-wide conference for CS students.  
delivered technical sessions about web development

## Personal Information

Gender: Male Nationality: Egyptian  
Date of Birth: August 29, 1992 Marital Status: Single  
References: Available upon request.