Omar M. ElTayeby

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# EDUCATION

**University of North Carolina at Charlotte, Charlotte, NC** December 2018 (expected)

Ph.D. in Computer Science, **GPA**: 3.9/4.0

**Clark Atlanta University, Atlanta, GA** May 2014

M.S. in Computer & Information Sciences, **GPA**: 4.0/4.0

**Thesis title**: Measuring the Influence of Mainstream Media on Twitter Users

**Alexandria University, Alexandria, Egypt** July 2011

B.S. in Communications & Electronics Engineering

# EXPERIENCE

**Research Assistant: University of North Carolina at Charlotte, NC** August 2014 – present

Personalized Curiosity Engine: used: Python, Linux

* Aim: personalize user’s curiosity in recommendation systems
* Applied a Conditional Random Field model to extract ingredients from recipes dataset
* Applied Naïve Bayes Classification to tag recipes with the most relevant cuisines

Learning Analytics: used: Hadoop, Python, Linux

* Developed a case study with faculty leaders to address their hypotheses about students attrition reasons
* Developed a model to predict students’ success according to their interactions with a Learning Management System
* Presented a poster about the case study at The Event Event1 workshop in the VIS conference 2016

DemographicVis: used: Python, HTML, CSS, JavaScript, D3, MongDB, Linux

* Aim: infer demographic information based on their generated content using an interactive visualization
* Developed an interface that enables the exploration of interesting topics for social media users
* The interface shows the relation between the demographic groups and topics of interests
* Published at the VIS conference 2015. The link to the interface is at2 and the preview video is at3

**Informatics Specialist Intern: Mayo Clinic, MN** May 2017 – August 2017

* Aim: optimize resource allocation and research prioritization strategy for diseases
* Method: examined the public’s perspective on their attention to different diseases
* Analyzed Reuters Corpora for comparing change in disease mention, sentiment and topics over time

**Teaching Assistant: Clark Atlanta University, Georgia** January 2014 – May 2014

* Presented basic concepts of Software Engineering for graduate students
* Prepared assignments for the students to grasp the understanding of software development cycles
* Organized the collaboration between students for the class project

**User Assistance Intern: Oak Ridge National Laboratory, TN** Summer 2013

Lustre file system Monitor: used: Python, HTML, CSS, JavaScript, D3 & Highcharts

* Aim: monitor the storage & I/O requests on High Performance Computers
* Developed a time-series web-based visualization tool to monitor the storage and I/O usage
* Compared the performances between two JavaScript libraries
* Published and presented a poster at LDAV of the VIS conference 2013

**Research Assistant: Clark Atlanta University, Georgia** August 2012 – May 2013

Twitter sentiment analysis: used: Python, NLTK, Weka, C++, SQL, Linux

* Analyzed the media’s influence on Twitter users using unsupervised learning
* Classified biased from unbiased news sources according to the users’ responses to the news pages
* Published a paper at the Complex Adaptive Systems Conference

Cancer genes analysis: used: C, MPI, Linux

* Measured the interaction stability of a DNA-protein complex of a cancerous cell
* Used relative motion detection and free energy perturbation methods to measure the interaction stability
* Implemented parallel algorithms on a high performance cluster using the Message Passing Interface (MPI) in C

**Control Systems Intern: SUMED (Arab Petroleum Pipelines Co.), Alexandria, Egypt** Summer 2009

* Designed Programmable Logic Controller circuits that control pumping motors of oil pipelines
* Emulated the circuits on Siemens S7 platform using LADDER diagram for emergency and high load
* Verified the consistency of the circuits for different inputs and test scenarios

# PUBLICATIONS, POSTERS & TALKS

**ElTayeby, O.**, Eaglin, T., Abdullah, M., Burlinson, D., Dou, W. and Yao, L. “Detecting Drinking-Related Contents on Social Media by Classifying Heterogeneous Data Types.” In *International Conference on Industrial, Engineering and Other Applications of Applied Intelligent Systems,* 2017 (pp. 364-373). Springer, Cham.

**ElTayeby, O.**, Dou, W. “A Survey on Interaction Log Analysis for Evaluating Exploratory Visualizations.” In *BELIV Workshop, 2016, IEEE Conference on Information Visualization*. IEEE.

**ElTayeby, O.**, Seminario, C. E., Dou, W., Maher, M. L., and Murphy, E. “A Case Study: Exploring Student Academic Performance Data for Actionable Knowledge.” In *The Event:* *Workshop on Temporal & Sequential Event Analysis, 2016, IEEE Conference on Information Visualization*. IEEE. [Poster]

Dou, W., Cho, I., **ElTayeby, O.**, Choo, J., Wang X., and Ribarsky, W. “DemographicVis: Analyzing demographic information based on user generated content.” In *Visual Analytics Science and Technology (VAST)*, 2015 *IEEE Conference on Information Visualization*, (pp. 57-64). IEEE.

**ElTayeby, O.**, Molnar, P. and George, R. “Measuring the Influence of Mass Media on Opinion Segregation through Twitter.” *Procedia Computer Science, 36*, (pp.152-159). ScienceDirect.

**ElTayeby, O.**, John, D., Patel, P. and Simmerman, S. “Comparative case study between D3 & Highcharts on Lustre metadata visualization.” *IEEE Symposium on Large-Scale Data Analysis and Visualization (LDAV), 2013* (pp. 127-128). IEEE [Poster]

**Presenter**, “Visualizations using JavaScript libraries.” Invited talk at the *Processing & Analysis of very Large Datasets workshop*, sponsored by Oak Ridge National Leadership Computing Facility 2013 in Knoxville, TN.

**ElTayeby, O.** and El Kamchouchi, H. “SAR imagery improvement using hybrid waveforms.” In *9th European Conference on Synthetic Aperture Radar, 2012. EUSAR.* (pp. 107-110). VDE.

**Presenter**, “Introduction to Synthetic Aperture Radar & current research.” Invited talk by IEEE Alex Student Branch in Alexandria, Egypt.

# COURSES & SKILLS

*Courses*: Algorithms & Data Structure, Software Engineering, Database Systems, Intelligent Systems, Operating Systems, Computer Architecture, Machine Learning, Knowledge Discovery in Databases, Information Visualization, Parallel Computing, Complex Adaptive Systems, Cloud Computing for Data Analysis

*Programming languages*: Python (Numpy, Scipy, PyMongo, PySpark, Jupyter), Java (JDBC), C/C++, MATLAB, HTML5, CSS, PHP, JavaScript (jQuery, D3, Esri, Leaflet, AJAX, Bootstrap), Hadoop, Pig, XML, Assembly, Bash and Shell scripting, Parallel Computing (MPI, OpenMP, CUDA), SAS programming, R script

*Databases*: SQL, MongoDB, Neo4j