Omar M. ElTayeby

9201 University City Blvd, Charlotte, NC 28223
(404) 729-3447 oeltayeb@uncc.edu

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 Event[1] 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 at[2] and the preview video is at[3]

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

[1] http://eventevent.github.io/, [2]demographicvis.uncc.edu, [3]vimeo.com/136206149

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