

Batoul Sharafeddin

Computational Scientist and Statistician

PERSONAL DETAILS

Address Bir Hassan Beirut, Lebanon
Phone (961) 78 863 528
Mail bms19@aub.edu.lb

EDUCATION

MS Computational Science <i>American University of Beirut</i> Cumulative GPA: 85	2017-2019
BS Statistics <i>American University of Beirut</i> Cumulative GPA: 81	2014-2017
Minor Biology <i>American University of Beirut</i>	2015-2017
Lebanese Baccalaureate II in Life Sciences <i>Choueifat International School</i>	2014

WORK EXPERIENCE

Research Assistant	2017-2019
<ul style="list-style-type: none">• <i>Pre-processing data</i>• <i>Working with different Natural Language Processing techniques</i>• <i>Classifying relevant words through a cross-document methodology</i>• <i>Implementing K-Means Clustering using R</i>• <i>Implementing Bayesian Graphs using R and Java</i>• <i>Implementing Hidden Markov Models using MatLab</i>• <i>Implementing Neural Networks using R and C</i>• <i>Implementing Distributional Similarity methods using Java</i>• <i>Developed a website using HTML, JavaScript, Python, and Java to display my work</i>• <i>Developing interactive methods in the website to allow user to update my results</i>• <i>Developing interactive methods in the website to allow user to input their own query for processing and to then view the results</i>	
Research Assistant	2019

- *Correcting both conceptual assignments for AUB's graduate course Discrete Models for Differential Equations (Math 350)*
- *Correcting both MatLab assignments for AUB's graduate course Discrete Models for Differential Equations (Math 350)*
- *Correcting both conceptual assignments for AUB's Numerical Linear Algebra course (Math 281)*
- *Correcting both MatLab assignments for AUB's Numerical Linear Algebra course (Math 281)*
- *Providing specific office hours designated for students attending the courses I am involved in*

Graduate Assistant

2018-2019

- *Correcting assignments for AUB's Functional Analysis and Partial Differential Equations course (Math 309)*
- *Correcting both MatLab exams for AUB's Numerical Computing course (Math 251)*
- *Giving the weekly recitation for AUB's Numerical Computing course (Math 251)*
- *Correcting both conceptual assignments for AUB's Numerical Linear Algebra course (Math 281)*
- *Correcting both MatLab assignments for AUB's Numerical Linear Algebra course (Math 281)*
- *Holding a weekly hour and a half session attending to student questions from all Math and Math-related courses at AUB within the "Math Clinic" initiative of AUB*
- *Providing specific office hours designated for students attending the courses I am involved in*
- *Proctored the exams of the courses I am involved in as well as proctoring many exams within the math department at AUB as well*

PROJECTS

Masters Thesis

2018-2019

- *Working on a cross-document analysis method for diagnosis extraction from electronic medical records*
- *Exploring distributional similarity measurements and Bayesian graph models to extend manually annotated data to non-annotated data*
- *Using accuracy metrics such as precision and recall to evaluate the automatic annotations my experiments are generating*
- *Enriching annotations by leveraging diagnosis graphs taken from medical textbooks*
- *Using distance metric DISCO which calculates semantic similarities between words and phrases based on the statistical analysis of large text collections to draw relations and conclusions about relevant data in medical text*

- *Building an interactive website to display my work and to allow users to get personalized results and update my results*

Optimization Project

2019

I solved a company portfolio convex optimization problem for a sample investment portfolios consist of allocated amounts of money made available in some properties owned by a company. The portfolio problem objective is to maximize the expected gain at the end of all time intervals considered, while taking into consideration a number of given limitations known as constraints.

Distributional Natural Language Processing

2018

Implemented a distributional similarity algorithm using JAVA and R to identify key words in a medical record. Key words given by practicing physicians were used for training and testing accuracy of data.

CUDA HMM implementation

2018

Used C to replicate a Hidden Markov Model in CUDA, a parallel programming environment, and applied the research data I co-own to it.

Clustering to Estimate

2017

Used a statistical clustering method to estimate the number of trees on the campus of the American University of Beirut and the expected circumference.

SKILLS

<i>Languages</i>	English (mother tongue) Arabic (highly fluent)
<i>Software</i>	HTML, JAVASCRIPT, R, JAVA, GITHUB, PYTHON, MATLAB, C, C++ (BASICS)

REFERENCES

Professor Fadi Zaraket

Department of Electrical Engineering
American University of Beirut
RA advisor
fz11@aub.edu.lb
01350000 ext 3484

Professor Nabil Nassif

Department of Mathematics
American University of Beirut
GA and RA advisor
nn12@aub.edu.lb
01350000 ext 4227