Noura Farra

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EDUCATION

PhD. Student in Computer Science, Columbia University, 2012 to present
Masters in Electrical and Computer Engineering, American University of Beirut, 2011-2012
Bachelor of Computer and Communications Engineering, American University of Beirut, 2006-2010

EMPLOYMENT

Sept. 2012 to present.	**Graduate Research Assistant at Columbia University**
June-August 2015	Software Engineering Intern at Google
June-August 2014	Graduate Intern at the Educational Testing Service (ETS)
July 2011 to July 2012.	Graduate Research Assistant at the American University of Beirut
July 2010 to July 2011.	Graduate Intern at Intel Corporation, Intel Labs, Hillsboro, OR

RESEARCH PROJECTS

- **Research Areas** Natural language processing, applied machine learning, opinion and sentiment analysis, multilingual analysis, social and political data analysis, applied data science, automatic spelling error correction.

- **PhD Research** I work on multilingual sentiment analysis directed towards topics, in high-resource, low-resource, and morphologically rich languages. I am using a combination of machine learning, deep learning, and linguistics for finding targets and sentiment in multiple languages. My work is geared towards political and crisis data in social media, online discussion, and news genres.

- **Internship at Google** I was an intern with the Civic Engagement group within Search. I worked on building models for identifying political issues in quotes by presidential election candidates.

- **Internship at ETS** I was responsible for developing a prototype for an essay-scoring component which automatically scores persuasive essays using opinion analysis. The system was based on detecting opinion-target pairs and assessing their relevance to essay themes and prompts, and was reasonably correlated with human scores.

- **Previous Graduate Research**
    - **At Intel**, I developed firmware for streaming and processing sensor data to reduce energy consumption on a low-power mobile phone. I also worked on partitioning stages of gesture recognition algorithms across multiple processors to reduce power consumption.

- **My Masters thesis** proposed an emotion recognition model based on examining the relationship between emotions and situational context in everyday life. I developed a model that combines physiological data with user context data in natural settings. To collect data, I conducted an extended user study using a mobile application.
- **Undergraduate Research** My research at the undergraduate level was in sensor and image data analysis for medical applications, particularly posture and spine health monitoring. I also worked on sentiment analysis from Arabic text.

COURSEWORK

- **Computer Science:** *(at Columbia)* Natural Language Processing, Statistical Machine Translation, Analysis of Algorithms, Computational Models of Social Meaning, Digitally Mediated Storytelling, Programming Languages and Translators *(at American University of Beirut)* Data Structures and Algorithms, Databases, Operating Systems, Software Engineering, Numerical Computing
- **Electrical and Computer Engineering**: Pattern Recognition, Data Mining, Advanced Applications for Data Mining, Stochastic Processes, Detection and Estimation theory, Signals theory, Image Processing, Communications theory, Computer Architecture

TECHNICAL PROFICIENCIES

- Programming Languages: Java, Python, C++, Perl, C
- Engineering tools proficiency: Matlab, assembly programming

PUBLICATIONS

Please see here.

PROFESSIONAL SERVICE

- Reviewer for EMNLP 2015,2016, *Computer Speech & Language*, and WNUT 2016
- Co-organizer for SemEval-2017 Task 4, Sentiment Analysis in Twitter
- Columbia University Women in Computer Science, Graduate VP and Career Chair 2014-2015
- Columbia University Graduate School of Arts and Science (GSAC) representative, 2014
- Co-organizer for the Arabic Natural Language Processing Workshop at EMNLP 2014
- Hopper at Grace Hopper Celebration of Women in Computing 2014

PRESENTATIONS/TALKS

- Presented my talk 'Coding, Language and Society' at Girls Who Code, in 08/2016
- Presented my internship research project on Political Issues in Quotes at Google, in 08/2015
- Presented my internship research project 'Finding Opinion-Target Pairs for Scoring Persuasive Essays' at ETS R&D Assessment Innovations Research Seminar, Educational Testing Service, Princeton, NJ, on 08/14/2014
- Showcased our 'Digitally Mediated Storytelling' class project 'Browser Topic Reader' at the Columbia Journalism School's 2014 Innovation Showcase, at the TOW Center for Digital Journalism, on May 12-13 2014
- Panelist on Women in Tech panel as part of Simulmedia's Salon Series, on 11/21/13

TEACHING EXPERIENCE

- Supervised multiple MS students in their research projects
- TA for the Natural Language Processing course at Columbia University (Spring 2016)
- TA for the Natural Language Processing course at Columbia University (Spring 2015)
- Assisted in courses: Data Mining, Analog Signal Processing, and Introduction to Programming at the American University of Beirut.
- Assisted in supervising undergraduate students in their final-year projects on mobile emotion recognition and recommender systems at the American University of Beirut.

AWARDS

- Herbert French Scholar at Columbia University School of Engineering (Feb 2016)
- Won the second prize at the Women in Engineering Hackathon at Columbia (Fall 2015)
- Computer Science Service Award at Columbia (April 2014)
- Intel Division Recognition Award (May 2011)
- Final Year Project nominated for Dean's Award for Creative Achievement (June 2010)
- Nominated for Engineering Penrose Award at the American University of Beirut (June 2010)

REFERENCES

- Kathleen McKeown, Professor of Computer Science at Columbia University
- Chris Pennock, Software Engineer at Google
- Zachary Hynes, Software Engineer at Google
- Nizar Habash, Professor of Computer Science at New York University, Abu Dhabi
- Swapna Somasundaran, Research Scientist at the Educational Testing Service
- Hazem Hajj, Associate Professor of Electrical Engineering at the American University of Beirut