

COLUMBIA UNIVERSITY

IN THE CITY OF NEW YORK

COMPUTER SCIENCE

June 5, 2023

To Whom It May Concern,

I am delighted to write in the strongest possible support of Dr. Mona Diab's nomination for the King Salman Prize for her significant contributions to Arabic Natural Language Processing. I have known Dr. Diab since she was a graduate student at the University of Maryland, mainly through her research papers and presentations at conferences and also as an 3sd3ll3n5 reviewer for journals I have edited. Since she arrived at Columbia early in 2005 to work in the Center for Computational Learning Systems (CCLS) group, I got to know her much better as a colleague and collaborator. We both worked on several large DARPA-funded research projects: in GALE) for a number of years – a project in which Dr. Diab's expertise in Arabic language processing played a key role; in BOLT (speech-to-speech translation); in Lorelie (understanding Low Resource Languages), and in DEFT (understanding information in context), in all of which her language expertise played a significant role. I have also worked on a number of other projects with her involving Code-Switching (the propensity for bilinguals to switch between languages – a serious problem for automatic processing of text and speech) for which we received a large NSF-CRI Large grant to collect and annotate code-switched data in a number of languages.

Since Mona left Columbia she has thrived, becoming a full professor at George Washington University and a Research Scientist at Meta (Facebook) where she leads the Responsible AI focusing on trustworthiness. We are still in close touch and I have been continually impressed by her. She is an amazing source of new ideas, has a wide-ranging knowledge of computational linguistics, has an enormous network of contacts in many areas beyond computer science which enables her to put together excellent interdisciplinary collaborations. She has also been the first person I have known to raise concerns about ethics in AI, starting workshops at conferences to begin to understand the problems, and suggesting that conference papers ask for author discussion of the ethical issues of the work that they are presenting.

Mona is one of a handful of researchers in the world with real expertise in modern computational approaches to language processing in Arabic. I believe she is the only such researcher with expertise in lexical semantics and word sense disambiguation who is in the United States and is working in this language. She has created an unsupervised method for word sense disambiguation that exploits translation correspondences in parallel corpora, which demonstrates that word-level translation correspondences are a very valuable source of information for sense disambiguation; the paper she has written on this subject has become a standard reference for other researchers. She has also made major contributions to our knowledge of Code-Switching and Machine Translation, leveraging her knowledge of Arabic semantics. She has also put together large international collaborations for the study of Code-Switching across many language pairs and for the analysis of metaphor. I have participated in both of these and can say unequivocally that Mona is the heart and

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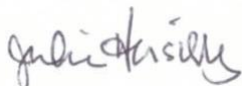
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soul of these collaborations. She has a phenomenal capacity to bring excellent scholars from many fields together to care passionately about academic problems.

Mona has also been in the forefront of the current computational fascination with mining social media for information about individuals and events and with using crowd-sourcing techniques (e.g. Amazon Mechanical Turk) to make annotation tasks such as creating gold-standard machine translation test corpora vastly more efficient and inexpensive. Mona is clearly one of the very top researchers on Arabic Natural Language Processing in the world. Her efforts to expand research in Arabic NLP, both in the United States and abroad, are having a major impact in expanding our knowledge of the Arabic language, in creating new resources for the automatic processing of Modern Standard Arabic and of Arabic dialects, and in increasing the number of students and faculty working in this area. In short, Mona Diab is clearly at the top of her field. She has also gone beyond her work on Arabic, working on multi-linguality and low resource scenarios (core cross lingual models, efficient representations), computational socio-pragmatics (stance detection, rumor detection, fake news vs. satire, emotion detection), and mental health conditions (schizophrenia detection).

In sum, Dr. Mona Diab is an outstanding researcher in both academia and industry. She combines expertise in computational learning and linguistics with a deep and rare understanding of Arabic languages, and she will, I am sure, continue to make tremendous contributions to science. I give her my highest possible recommendation for the King Salman Prize. She is a star.

Sincerely yours,



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Biographical information:

Julia Hirschberg is Percy K. and Vida L. W. Hudson Professor of Computer Science at Columbia University. She was department chair from 2012-2018. She previously worked at Bell Laboratories and AT&T Labs where she created the HCI Research Department. She served on the Association

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for Computational Linguistics executive board (1993-2003), the International Speech Communication Association board (1999-2007; 2005-7 as president), the International Conference on Spoken Language Processing board (1996--), the NAACL executive board (2012-15), the CRA Executive Board (2013-14), and the AAI Council (2012-15). She has been editor of *Computational Linguistics* and *Speech Communication*, is a fellow of AAI, ISCA, ACL, ACM, and IEEE, and a member of the National Academy of Engineering, the American Academy of Arts and Sciences, and the American Philosophical Society. She received the IEEE James L. Flanagan Speech and Audio Processing Award and the ISCA Medal for Scientific Achievement in 2011 and the ISCA Distinguished Service Medal in 2020. She currently serves on the IEEE Speech and Language Processing Technical Committee and on selection committees for the National Academy of Engineering, the American Academy of Arts and Sciences, and the American Philosophical Association. She serves on the CRA-WP Board (former co-chair) and has worked for diversity for many years at AT&T and Columbia. She received the Columbia Engineering School Alumni Association (CESAA) Distinguished Faculty Teaching Award in 2009 and the Janette and Armen Avanesians Diversity Award in 2018. She won best paper awards from Eurasip (2005) for Best Paper published in *Speech Communication* for 2003-2004, Interspeech 2006 (Best Student Paper), the AVIOS award for Best Paper appearing in the *Journal of AVIOS* in 1994, Best Paper at CoginfoComm 2012, Best Student Paper at *Speech Prosody* 2014, Best Paper Award for *Cognitive* 2015, Best Paper Award for an article appearing in *Computer Speech and Language*, and Best Short Paper EMNLP 2021. She works on spoken language processing and NLP, studying text-to-speech synthesis, spoken dialogue systems, entrainment in conversation, detection of deceptive, trusted, charismatic, and emotional speech, and identifying hate speech, false information and radicalization efforts in social media.