Sabit Hassan | Curriculum Vitae

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EDUCATION

PhD in Computer Science *University of Pittsburgh* 2021–
Supervised by: Dr. Malihe Alikhani

BSc in Computer Science *Carnegie Mellon University* 2014–2018
GPA: 3.79/4.0, *Minors:* Mathematics and History
Thesis: Interactive Evaluation and Training of Classifiers under Limited Resources,
Supervised by: Prof. Bhiksha Raj and Assoc. Teach. Prof. Saquib Razak

HONORS AND AWARDS

Outstanding Academic Achievement	*Carnegie Mellon University Qatar*	May 2018
University Honors	*Carnegie Mellon University*	May 2018
SCS College Honors	*Carnegie Mellon University*	May 2018
History Honors	*Phi Alpha Theta*	May 2018
Carnegie Mellon Dean's List	*Carnegie Mellon University*	Apr 2015–Apr2018

RESEARCH

Doctoral Research *University of Pittsburgh, Pittsburgh, PA* Aug 2021–
Computer Science Department, Supervised by: Dr. Malihe Alikhani
AI Moderation for Safer Online Space [Funded by (DARPA)]

- Integrated RST and PDTB frameworks with LLMs for better content preservation during style-transfer
- Curated a large-scale multilingual dataset from Reddit for AI moderation

Mitigating Bias of Large Language Models

- Proposed a novel dynamic clustering-based active learning algorithm which is robust against bias

Other Projects:

- Improved prosody in sign language generation by incorporating intensity-enhanced GLOSS representations within a novel Progressive Transformer model.
- Modeled socio-affective and cognitive engagement in patient-nurse conversation

Research Assistant *Qatar Computing Research Institute, Doha, Qatar* Oct 2019–Jun 2021
Arabic Language Technologies Group, Supervised by: Dr. Kareem Darwish

- Trained SOTA ML/transformer models and collected datasets for Arabic dialect identification, offensive language, adult content, spam, and hate-speech detection..
- Studied efficacy of cross-lingual approaches for Spanish, Arabic, and English emotion detection
- Studied the role of data diversity and segmentation for pretraining a SOTA Arabic BERT model

Research Associate *Carnegie Mellon University Qatar, Doha, Qatar* May 2018–Aug 2019
MADAR Project, Supervised by: Prof. Nizar Habash and Asst. Teach. Prof. Houda Bouamor

- Co-organized MADAR Shared Task on fine-grained Arabic Dialect Identification

Minicomplexity Project, Supervised by: Assoc. Teach. Prof. Christos Kapoutsis

- Characterized Polynomial-size Oracle Hierarchy for small one-way finite automata and proved key properties of the hierarchy, such as strictness, upper, and lower bounds of levels of the hierarchy.

SCS Honors Undergraduate Thesis *Carnegie Mellon University* Aug 2017–Apr 2018
School of Computer Science, Supervised by: Prof. Bhiksha Raj and Assoc. Teach. Prof. Saquib Razak

- Proposed a clustering-based method that reduces training time for *Active Learning.*
- Proposed a novel clustering-based algorithm for interactive evaluation of classifiers.

TEACHING

Graduate Teaching Assistant *University of Pittsburgh, Pittsburgh, PA* Aug 2021–

- Algorithms and Data Structures 2 (CS 1501)

Course Assistant *Carnegie Mellon University Qatar, Doha, Qatar* Jan 2016–May 2018

- CMUQ Freshman Edge Summer Program
- Great Theoretical Ideas in Computer Science (15-251)
- Parallel and Sequential Data Structures and Algorithms (15-210)
- Fundamentals of Programming and Computer Science (15-112)
- Concepts of Mathematics (21-127)

Summer Internship Mentor *Qatar Computing Research Institute, Doha, Qatar* May 2020–Jul 2020
Mentored interns on the use of machine learning in NLP tasks

SERVICES

- **Co-organizer,** MADAR Shared Task on Fine-Grained Arabic Dialect Identification, 2019
- **Reviewer:** ACL 2023, EACL 2022. EMNLP 2022, AAAI-22 Special Track on AI for Social Impact, SemEval 2020
- **Member,** Student Academic Committee, Academic Review Board, Carnegie Mellon University Qatar

PROJECTS

FARASA *Qatar Computing Research Institute, Doha, Qatar* 2020–2021
Arabic Language Technologies Group, Supervised by: Dr. Kareem Darwish

- Assisted in frontend development of FARASA toolkit (https://farasa.qcri.org/)
- Implemented API quota allocation and managed SQL database of requests and users

ASAD *Qatar Computing Research Institute, Doha, Qatar* 2020–2021
Arabic Language Technologies Group, Supervised by: Dr. Kareem Darwish

- Deployed SVM/BERT models for text classification within the social media analysis toolkit ASAD (https://asad.qcri.org/)
- Developed initial frontend and backend for ASAD.

Early Warning Simulation *Qatar Computing Research Institute, Doha, Qatar* 2020–2021
Arabic Language Technologies Group, Supervised by: Dr. Kareem Darwish

- Developed a system that crawls newspapers articles and identifies antagonism level against Qatar
- Developed frontend and managed MongoDB database of newspapers articles

PUBLICATIONS

Published/Accepted:

* denotes equal contribution

[1] **Hassan, S.**, Alikhani, M. D-CALM: A Dynamic Clustering-based Active Learning Approach for Mitigating Bias, **ACL FINDINGS, *2023***

[2] Wang, Y., Donovan, H.A.S., **Hassan, S.**, Alikhani, M. MedNgage: A Dataset for Understanding Engagement in Patient-Nurse Conversations. **ACL FINDINGS, *2023***

[3] Ye, M., Sikka, K., Atwell, K., **Hassan, S.,** Divakaran, A., Alikhani, M. Multilingual Content Moderation and Challenges: A Case Study of Reddit. **EACL,** ***2023***

[4] Atwell, K.*, **Hassan, S.*,** Alikhani, M. APPDIA: A Discourse-aware Transformer-based Style Transfer Model for Offensive Social Media Conversations. ***COLING, 2022***

[5] Inan, M.*, Yang, Z.*, **Hassan, S.*,** Quandt, L., & Alikhani, M. Modeling Intensification for Signed Language Generation: A Computational Approach. ***ACL FINDINGS, 2022***

[6] Mubarak, H., **Hassan, S.,** & Chowdhury, S. Emojis as Anchors to Detect Arabic Offensive Language and Hate Speech. ***NLE, 2022***.

[7] **Hassan, S.,** Shaar, S., & Darwish, K. Cross-lingual Emotion Detection. ***LREC, 2022***

[8] Mubarak, H., **Hassan, S.**, Chowdhury, S. A., & Alam, F. ArCovidVac: Analyzing Arabic Tweets About COVID-19 Vaccination. ***LREC, 2022***.

[9] **Hassan, S.,** Mubarak, H., Abdelali, A., & Darwish, K. ASAD: Arabic Social Media Analytics and unDerstanding. ***EACL 2021***

[10] Mubarak, H., **Hassan, S.,** & Abdealali, A. Adult Content Detection on Arabic Twitter: Analysis and Experiments. ***WANLP 2021***

[11] Abdelali, A., Mubarak, H., Samih, Y., **Hassan, S.,** & Darwish, K. QADI: Arabic Dialect Identification in the Wild. ***WANLP 2021***

[12] Mubarak, H., & **Hassan, S.** (2021, April). ArCorona: Analyzing Arabic Tweets in the Early Days of Coronavirus (COVID-19) Pandemic. ***LOUHI, 2021***

[13] Mubarak, H., Abdelali, A., **Hassan, S**., & Darwish, K.Spam Detection on Arabic Twitter. ***SocInfo, 2020***

[14] **Hassan, S.,** Samih, Y., Mubarak, H., & Abdelali, A. ALT at SemEval-2020 task 12: Arabic and English offensive language identification in social media. ***SemEval, 2020***

[15] **Hassan, S.,** Samih, Y., Mubarak, H., Abdelali, A., Rashed, A., & Chowdhury, S. A. ALT submission for OSACT shared task on offensive language detection. ***OSACT, 2020*** [Ranked **1st** in subtask A]

[16] Mubarak, H., **Hassan, S.,** & Abdelali, A. Constructing a bilingual corpus of parallel tweets. ***BUCC, 2020***

[17] Bouamor, H., **Hassan, S.,** & Habash, N. The MADAR Shared task on Arabic Fine-Grained Dialect Identification. ***WANLP, 2019***. **[co-organizer]**

[18] Anabtawi, M., **Hassan, S.,** Kapoutsis, C., & Zakzok, M. An Oracle Hierarchy for Small One-way Finite Automata. ***LATA, 2019***

[19] **Hassan, S.,** Shaar, S., Raj, B., & Razak, S. (2018, December). Interactive Evaluation of Classifiers Under Limited Resources. ***IEEE ICMLA, 2018***

Pre-prints:

[20] Abdelali, A., **Hassan, S.,** Mubarak, H., Darwish, K., & Samih, Y. (2021) Pre-Training BERT on Arabic Tweets: Practical Considerations. *arXiv preprint arxiv:2102.10684*

Abstracts:

[21] **Hassan, S.***, Atwell, KJ.*, Alikhani, M. Studying the Effect of Moderator Biases on the Diversity of Online Discussions: A Computational Cross-linguistic Study. ***CogSci, 2022***

[22] Inan, M.*, Zhong, Y.*, **Hassan, S.***, Quandt, L., Alikhani, M. Learning cognitive and linguistic prosodic categories for automatic cross-lingual sign language understanding. ***CogSci, 2022***