

Sabit Hassan | Curriculum Vitae

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EDUCATION

PhD in Computer Science <i>Supervised by: Dr. Malihe Alikhani</i>	<i>University of Pittsburgh</i>	2021–
BSc in Computer Science <i>GPA: 3.79/4.0, Minors: Mathematics and History</i> <i>Thesis: Interactive Evaluation and Training of Classifiers under Limited Resources,</i> <i>Supervised by: Prof. Bhiksha Raj and Assoc. Teach. Prof. Saquib Razak</i>	<i>Carnegie Mellon University</i>	2014–2018

HONORS

Outstanding Academic Achievement	<i>Carnegie Mellon University Qatar</i>	May 2018
University Honors	<i>Carnegie Mellon University</i>	May 2018
SCS College Honors	<i>Carnegie Mellon University</i>	May 2018
History Honors	<i>Phi Alpha Theta</i>	May 2018
Carnegie Mellon Dean's List	<i>Carnegie Mellon University</i>	Apr 2015–Apr 2018

RESEARCH

Doctoral Research <i>Computer Science Department, Supervised by: Dr. Malihe Alikhani</i>	<i>University of Pittsburgh, Pittsburgh, PA</i>	Aug 2021–
<ul style="list-style-type: none">Developed discourse-aware style-transfer models by integrating PDTB and RST frameworks with pretrained transformer models for better content preservation.Improved prosody in sign language generation by incorporating intensity-enhanced GLOSS representations within a novel Progressive Transformer model.		
Research Assistant <i>Arabic Language Technologies Group, Supervised by: Dr. Kareem Darwish</i>	<i>Qatar Computing Research Institute, Doha, Qatar</i>	Oct 2019–Jun 2021
<ul style="list-style-type: none">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 detectionStudied importance of data diversity and segmentation for pretraining a SOTA Arabic BERT model		
Research Associate <i>MADAR Project, Supervised by: Prof. Nizar Habash and Asst. Teach. Prof. Houda Bouamor</i>	<i>Carnegie Mellon University Qatar, Doha, Qatar</i>	May 2018–Aug 2019
<ul style="list-style-type: none">Co-organized MADAR Shared Task on fine-grained Arabic Dialect Identification <i>Minicomplexity Project, Supervised by: Assoc. Teach. Prof. Christos Kapoutsis</i> <ul style="list-style-type: none">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 <i>School of Computer Science, Supervised by: Prof. Bhiksha Raj and Assoc. Teach. Prof. Saquib Razak</i>	<i>Carnegie Mellon University</i>	Aug 2017–Apr 2018
<ul style="list-style-type: none">Proposed a clustering-based method that reduces training time for <i>Active Learning</i>.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

AWARDS AND GRANTS

- **Team Lead**, Kuzneski Innovation Cup – \$5K (prize)
- **Team Member**, Amazon Taskbot Challenge – \$250K (grant)

SERVICES

- **Co-organizer**, MADAR Shared Task on Fine-Grained Arabic Dialect Identification, 2019
- **Reviewer**: EACL 2022, EMNLP 2022, AACL–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] Ye, M., Sikka, K., Atwell, K., **Hassan, S.**, Divakaran, A., Alikhani, M. Multilingual Content Moderation and Challenges: A Case Study of Reddit. *EACL*, **2023**
- [1] Atwell, K.*, **Hassan, S.***, Alikhani, M. APPDIA: A Discourse-aware Transformer-based Style Transfer Model for Offensive Social Media Conversations. *COLING*, **2022**
- [2] Inan, M.*, Yang, Z.*, **Hassan, S.***, Quandt, L., & Alikhani, M. Modeling Intensification for Signed Language Generation: A Computational Approach. *ACL FINDINGS*, **2022**

- [3] Mubarak, H., **Hassan, S.**, & Chowdhury, S. Emojis as Anchors to Detect Arabic Offensive Language and Hate Speech. **NLE, 2022.**
- [4] **Hassan, S.**, Shaar, S., & Darwish, K. Cross-lingual Emotion Detection. **LREC, 2022**
- [5] Mubarak, H., **Hassan, S.**, Chowdhury, S. A., & Alam, F. ArCovidVac: Analyzing Arabic Tweets About COVID-19 Vaccination. **LREC, 2022.**
- [6] **Hassan, S.**, Mubarak, H., Abdelali, A., & Darwish, K. ASAD: Arabic Social Media Analytics and unDerstanding. **EACL 2021**
- [7] Mubarak, H., **Hassan, S.**, & Abdealali, A. Adult Content Detection on Arabic Twitter: Analysis and Experiments. **WANLP 2021**
- [8] Abdelali, A., Mubarak, H., Samih, Y., **Hassan, S.**, & Darwish, K. QADI: Arabic Dialect Identification in the Wild. **WANLP 2021**
- [9] Mubarak, H., & **Hassan, S.** (2021, April). ArCorona: Analyzing Arabic Tweets in the Early Days of Coronavirus (COVID-19) Pandemic. **LOUHI, 2021**
- [10] Mubarak, H., Abdelali, A., **Hassan, S.**, & Darwish, K. Spam Detection on Arabic Twitter. **SocInfo, 2020**
- [11] **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**
- [12] **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]
- [13] Mubarak, H., **Hassan, S.**, & Abdelali, A. Constructing a bilingual corpus of parallel tweets. **BUCC, 2020**
- [14] Bouamor, H., **Hassan, S.**, & Habash, N. The MADAR Shared task on Arabic Fine-Grained Dialect Identification. **WANLP, 2019. [co-organizer]**
- [15] Anabtawi, M., **Hassan, S.**, Kapoutsis, C., & Zakzok, M. An Oracle Hierarchy for Small One-way Finite Automata. **LATA, 2019**
- [16] **Hassan, S.**, Shaar, S., Raj, B., & Razak, S. (2018, December). Interactive Evaluation of Classifiers Under Limited Resources. **IEEE ICMLA, 2018**

Pre-prints:

- [17] 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:

- [18] **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**
- [19] 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**