Nabiha Asghar

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Education

- **University of Waterloo**, Waterloo, ON, Canada.
  Ph.D. in Computer Science (Sept 2014 - Present), GPA: 94.75%
  Research: Machine Learning, Deep Learning, Natural Language Processing (text classification & generation, emotion modeling in text), Human-Computer Interaction
- **University of Waterloo**, Waterloo, ON, Canada.
  M.Math. in Combinatorics & Optimization (Sept 2011 - Dec 2012).
  Research: Discrete Mathematics, Graph Theory
- **Lahore University of Management Sciences**, Lahore, Pakistan.
  B.Sc. Honors. in Mathematics (2006-2010). CGPA: 3.91/4.00.

Skills

- Machine Learning, Deep Learning (RNNs, CNNs, Transformers, VAEs), Natural Language Processing (Dialogue Systems, Question Answering, Domain Adaptation), Transfer Learning, Representation Learning, Affective Computing (Emotion Modeling)
- Python (PyTorch, TensorFlow/Keras, Java (familiar), Linux, Git, AWS (EC2, S3)

Experience

- **Graduate Student Affiliate**, *Vector Institute for AI, Canada* (Feb 2018 – Present).
  As a PhD student, I collaborated with Vector researchers to develop emotion-aware deep learning models for open-domain conversational agents.
- **Data Scientist (ML)**, *ProNavigator, Canada*, (Mar 2017 – Aug 2018).
  Built conversational AI engine for customer support (insurance domain). Trained and tested the ML and NLP algorithms, and contributed to deployment/monitoring/debugging models in production.
- **Ph.D. Researcher**, *Huawei Noah's Ark Lab, Hong Kong* (May 2016 – Apr 2019).
  As a PhD student, I collaborated with Huawei's AI lab to develop a deep active learning algorithms for human-like dialogue generation. Also developed a variant of memory networks to perform domain adaptation (transfer learning) for conversational agents.
- **AI Researcher**, *Comp. Health Informatics Lab, Univ. Waterloo* (Jan – June 2014)
  Explored emotion modeling in human-computer interaction (HCI) via Partially Observable Markov Decision Processes and Monte-Carlo methods for AI planning.

Research

- *"Progressive Memory Banks for Incremental Domain Adaptation."* ICML Workshop, 2019.
- *"Affective Neural Response Generation."* 40th European Conference on Information Retrieval (ECIR), 2018.
- *"Deep Active Learning for Dialogue Generation."* 6th Joint Conference on Lexical and Computational Semantics (*SEM), 2017.
- *"Automatic Extraction of Causal Relations from Natural Language Texts: A Comprehensive Survey."* arXiv:1605.07895, May 2016.
- *"Yelp Dataset Challenge: Review Rating Prediction."* arXiv:1605.05362, 2016.
- *"Intelligent Affect: Rational Decision Making for Socially Aligned Agents."* 31st Conference on Uncertainty in Artificial Intelligence (UAI), 2015.
- *"Monte-Carlo Planning for Socially Aligned Agents using Bayesian Affect Control Theory."* University of Waterloo, Technical Report # CS-2014-21, 2014.