Abdelrhman (Abdul) Saleh

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EDUCATION

Harvard University Cambridge, MA
A.B. in Computer Science and Statistics. GPA 3.9 / 4.0 May 2020
Thesis: Towards Social and Interpretable Neural Dialog Systems
Relevant Coursework: Machine Learning, Reinforcement Learning, Dimensionality Reduction, Statistical Inference, Applied Linear Algebra, Data Structures and Algorithms, Abstraction and Design in Computation.
Awards: Derek Bok Distinction in Teaching Award 2017, PRISE Fellowship 2019

TECHNICAL SKILLS

Fluent in: R, Python (PyTorch, TensorFlow, Keras, scikit-learn, H2O)
Familiar with: C, SQL, OCaml

EXPERIENCE

MIT Media Lab Cambridge, MA
Undergraduate Researcher, Affective Computing Group May – Sept 2019

- Researched reinforcement learning methods for natural language processing.
- Implemented social dialog systems that can better communicate and respond to emotions.
- Proposed a novel reinforcement learning approach for training open-domain dialog systems.
- Co-authored a paper to be presented at AAAI 2020.

MIT Computer Science and Artificial Intelligence Lab Cambridge, MA
Undergraduate Researcher, Spoken Language Systems Group June 2018 – Feb 2019

- Researched novel neural methods for transfer learning and natural language processing.
- Developed neural models in TensorFlow to detect political bias in news articles.
- Implemented algorithms for learning high-quality document embeddings through summarization.
- Co-authored two papers that were presented at NAACL 2019 and SemEval 2019.

SELECTED PUBLICATIONS

A. Saleh[*], N. Jaques[*], A. Ghandeharioun, J. H. Shen, R. Picard
Hierarchical Reinforcement Learning for Open-Domain Dialog
Oral Presentation. Proceedings of the Thirty-Fourth AAAI Conference on Artificial Intelligence (AAAI, 2020).

A. Saleh, R. Baly, A. Barron-Cedeno, G. Da San Martino, M. Mohtarami, P. Nakov, and J. Glass
Team QCRI-MIT at SemEval-2019 Task 4: Propaganda Analysis Meets Hyperpartisan News Detection
Proceedings of the 13th International Workshop on Semantic Evaluation (SemEval, 2019)

PROJECTS

The Tao Te Ching: An NLP Perspective Aug – Sept 2019

- Collected and analyzed a dataset of over 170 English translations of the Tao Te Ching.
- Built an open-source pipeline for understanding philosophical texts through their translations using state-of-the-art natural language processing tools.

On Variational Autoencoders: Generative Models for Dimension Reduction Nov 2019

- Derived and analyzed variational autoencoders for robust dimension reduction rather than data generation.
- Ran simulation studies showing the effectiveness of VAEs for dimension reduction with outliers.

Semi-Supervised Audio Classification with CNNs April 2019

- Used k-means cluster assignments of unlabeled audio clips to augment a convolutional neural network for urban sound classification. Achieved top performance in a course-wide competition with 40 teams.

LEADERSHIP & ACTIVITIES

Harvard Summit for Young Leaders in China Shanghai, China
Seminar Leader August 2018

- Taught a one-week introductory machine learning seminar to 35 top high school students.
- Covered linear regression, SVMs, clustering, model interpretability, and AI ethics.