Ash (Afshin) Rahimi

Research Interests

I'm interested in research within the fields of Natural Language Processing, Social Network Analysis and Machine Learning. I am specifically interested in exploiting both structured and unstructured data to help machines understand human language in Emergency Situations and Health Informatics.

Education

2014–2018 **PhD in Computer Science**, *The University of Melbourne*, Melbourne, Australia.
Thesis: Analysing the Interplay of Location, Language and Links Utilising Geotagged Twitter Content.

2010–2013 **MSc. Computational Linguistics**, *Sharif University of Technology*, Tehran, Iran.
Thesis: An Information Theoretic Analysis of Phonetic Sequences, The Case of Sonority.

2002–2006 **BSc. Computer Science**, *Sharif University of Technology*, Tehran, Iran.
Thesis: Authorship Attribution of Persian Texts.

Academic Activities

Reviewing Reviewed for ACL, EMNLP, EACL and Transactions of Information Systems in the last few years.

Teaching

- Coordinator for Database Principles, Sem-1 2020, UQ.
- Lecturer for Undergraduate Machine Learning, 2019.
- Tutor for Web Search and Text Analytics, AI for Mechatronics, Statistical Machine Learning, Database Systems, Cloud Computing at The University of Melbourne and Newman College, multiple years.

Organisation

- Computational Social Science Area Chair for ACL 2020.
- Co-organiser for W-NUT Workshop 2016, 2018, 2019.
- Co-organiser for shared tasks in W-NUT 2016 and 2020.
- Remote Presentation Chair for ACL 2018.

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Student Supervision

- Master thesis supervisor, Gaurav Arora, Unimelb, 2019.
- Master thesis supervisor, Karen Qu, Unimelb, 2019.
- PhD Advisory Committee Member of Yimeng Dai, Unimelb, 2018.
- PhD Advisory Committee Member of Yiqing Zhang, Unimelb, 2018.

Thesis Examination

- Master Thesis Examiner, Unimelb, 2018, 2019.

Publications

2020 Dirk Hovy, Afshin Rahimi, Timothy Baldwin, and Julian Brooke. *Visualizing Regional Language Variation Across Europe on Twitter*, pages 3719–3742. Springer International Publishing, Cham, 2020.

2020 Afshin Rahimi, Timothy Baldwin, and Karin Verspoor. Wikiumls: Aligning umls to wikipedia via cross-lingual neural ranking. *arXiv preprint arXiv:2005.01281*, 2020.

2019 Afshin Rahimi, Yuan Li, and Trevor Cohn. Multilingual ner transfer for low-resource languages. In *Proceedings of the 57th Annual Meeting of the Association for Computational Linguistics, ACL 2019, Florence, Italy, (to appear)*, 2019.

2019 Gaurav Arora, Afshin Rahimi, and Timothy Baldwin. Does an LSTM forget more than a CNN? an empirical study of catastrophic forgetting in NLP. In *Proceedings of the The 17th Annual Workshop of the Australasian Language Technology Association*, pages 77–86, Sydney, Australia, 4–6 December 2019. Australasian Language Technology Association.

2018 Wei Xu, Alan Ritter, Tim Baldwin, and Afshin Rahimi. Proceedings of the 2018 emnlp workshop w-nut: The 4th workshop on noisy user-generated text. In *Proceedings of the 2018 EMNLP Workshop W-NUT: The 4th Workshop on Noisy User-generated Text*, 2018.

2018 Afshin Rahimi, Timothy Baldwin, and Trevor Cohn. Semi-supervised user geolocation via graph convolutional networks. In *Proceedings of the 56th Annual Meeting of the Association for Computational Linguistics, ACL 2018, Melbourne, Australia, July 15-20, 2018, Volume 1: Long Papers*, pages 2009–2019, 2018.

2018 Afshin Rahimi. *Analysing the interplay of location, language and links utilising geotagged Twitter content*. PhD thesis, 2018.

2018 Taro Miyazaki, Afshin Rahimi, Trevor Cohn, and Timothy Baldwin. Twitter geolocation using knowledge-based methods. In *Proceedings of the 2018 EMNLP Workshop W-NUT: The 4th Workshop on Noisy User-generated Text*, pages 7–16, 2018.

2017 Afshin Rahimi, Trevor Cohn, and Timothy Baldwin. A neural model for user geolocation and lexical dialectology. In *Proceedings of the 55th Annual Meeting of the Association for Computational Linguistics (ACL 2017)*, 2017.

2017 Afshin Rahimi, Trevor Cohn, and Timothy Baldwin. Continuous representation of location for geolocation and lexical dialectology using mixture density networks. In *Proceedings of the Proceedings of the 2017 Conference on Empirical Methods in Natural Language Processing (EMNLP 2017) (to appear)*, 2017.

2016 Afshin Rahimi, Trevor Cohn, and Timothy Baldwin. pigeo: A python geotagging tool. *Proceedings of ACL-2016 System Demonstrations*, pages 127–132, 2016.

2015 Afshin Rahimi, Duy Vu, Trevor Cohn, and Timothy Baldwin. Exploiting text and network context for geolocation of social media users. In *Proceedings of the 2015 Conference of the North American Chapter of the Association for Computational Linguistics — Human Language Technologies (NAACL HLT 2015)*, Denver, USA, 2015.

2015 Afshin Rahimi, Trevor Cohn, and Timothy Baldwin. Twitter user geolocation using a unified text and network prediction model. *Proceedings of the 53rd Annual Meeting of the Association for Computational Linguistics — 7th International Joint Conference on Natural Language Processing (ACL-IJCNLP 2015)*, 2015.

Work Experience

01/2020–now **Lecturer (Assistant Professor)**, University of Queensland, Brisbane, Australia.

12/2018–12/2019 **Associate Lecturer/Research Fellow in ARC Training Centre for Medical Technologies**, Melbourne University, Melbourne, Australia.

I hold a joint position as both an associate lecturer with lecturing and subject coordination responsibilities, and also a research fellow in ARC Training Centre in Cognitive Computing for Medical Technologies, where I'll be working on NLP for medical decision making. The research is a collaboration with researchers at The University of Melbourne (Tim Baldwin and Karin Verspoor) and IBM Research Australia.

04/2018–03/2019 **Research Fellow in NLP**, Melbourne University, Melbourne, Australia.

I've joined the NLP group at the University of Melbourne, working on NLP for low-resource languages as part of the Ariel project supervised by Trevor Cohn. I finalised my work in transfer learning for low-resource languages as a long paper in ACL 2019.

2016–2017 **Internship (4months)**, Telstra TELCO, Melbourne, Australia.

I worked on customer intent prediction in interactive voice response (IVR) systems based on historical events (website visits, previous calls). My work involved working with technologies like GreenPlum and Theano to create learning models that can predict the intent of a customer (e.g. talking about billing, a problem with their Smart TV service or a failing modem) from their previous events (e.g. page visit, previous calls, previous bill) which improved routing of customers to agents resulting customer satisfaction and cost reduction. The CTO of the company mentioned the results of my work in a general meeting and supported the investment of the company in the same line of work to improve customer experience.

2013–2014 **Researcher**, Linneaus University, Stockholm, Sweden.

I worked on Information Retrieval, vector space models, feature extraction and classification/clustering of Stance/Sentiment in real time big data streams.

2011–2013 **Java Developer**, MITRC, Tehran, Iran.

I was responsible for a team of 4 developers working on the crawler component of a large scale web search engine. I could improve the crawler's performance from just 1 million fetched URLs to 1 billion at the end. The crawler had about 2 billion URLs where 1 billion ones were fetched and updated regularly. The data was about 30 TB. We used Hadoop's HDFS, MapReduce and HBase. We built our web crawler on top of Apache Nutch an open source popular web crawler.

2006–2011 **Software Developer and System Administrator**, KECO, Tehran, Iran.

Main responsibilities include: Software Development (Web and Desktop) using .NET (C# and ASP) and MSSQL. Cisco Switching Administrator (50+ access switches and 4 distribution switches in a 2 tier network architecture, 500+ nodes, vlan, portsec, spanning-tree, redundancy, architecture, load balancing, high-availability), Windows Network Administrator (Active Directory, High Availability, Centralised Management), ERP Administrator (Supply Chain, Salary, HR), Microsoft SQL Server Administrator and Developer. I learned to work with technology under heavy pressure where a medium sized company (2k+ users) relies on your design and administration 24/7.

Technical skills

NLP	Expertise in Core NLP tasks
Machine Learning	Expertise in Deep Learning frameworks, and their application to text, image, and graph data.
Collaboration	Git, JIRA, GreenHopper
Big Data	Experienced in Hadoop MapReduce, NoSQL and Hive
Database	SQL, GreenPlum, HBase, Lucene
Network	Experienced in Cisco Switching Network Design and Maintenance
Programming	Experienced in Python and Java

Languages

English	Professional (IELTS 8)
Persian	Native

Honours and Awards

2020 Awarded QUEX grant to support one PhD student in Social Computing.

2017 My paper on geolocation was selected to be presented in the outstanding session in ACL 2017.

2015 Awarded Melbourne University's Travel Scholarship to attend NAACL 2015 conference.

2015 Awarded Google's Travel Scholarship to attend ACL 2015 conference.

2014 Awarded Australia's government scholarship (IPRS) for PhD studies in The University of Melbourne.

2013 Graduated as the top student of the M.Sc. program in Computational Linguistics from Sharif U. of Tech.

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Lecturer, University of Queensland

2002 Ranked 241st among more than 500k high school students in national entrance exam for universities in Iran.

References

Tim Baldwin My PhD supervisor at The University of Melbourne.
tb@ldwin.net

Trevor Cohn My PhD supervisor at The University of Melbourne.
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