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Work history

- Faculty member- Assistant professor- **Sharif University of Technology** (Since May 2010)
  - o Department of Computational Linguistics, Research Center for Biomedical Engineering and Health Systems, Speech and Language Processing Lab, Social Robotics Lab
- Casual Lecturer- **University of Sydney** (Since Aug 2015)
  - o School of Information Technologies
- Research fellow- **University of Sydney** (Oct 2007-Jun 2008)
  - o School of Information Technologies, Health Information Technologies Research Laboratory
- Research fellow- **Research Center for Intelligent Signal Processing** (2005- 2010)

Education

- Ph.D. in Electrical Engineering– Biomedical Eng., (2008), Amirkabir University of Technology (Polytechnic of Tehran)
- M.Sc. in Biomedical Engineering, (2003), Amirkabir University of Technology (Polytechnic of Tehran)
- B.Sc. in Biomedical Engineering, (2000), National University (Shahid Beheshti Medical University)

Research interests

- Data analytics, Machine learning, pattern recognition, Artificial intelligence, Big data
- Natural language processing, Computational Linguistics, Speech processing
- Biomedical signal processing, Biomedical instruments

Computer skills

- Languages: Python/C++/R
- Prototyping: MATLAB/Octave
- Database: SQL/SQLite
- Big Data: Hadoop/MapReduce
- SPSS/JavaScript/HTML

Courses Taught

- University of Sydney
  - Data Analytics (2015)
- Sharif University of Technology
  - Natural Language Processing (Fall semester, 2012-now)
  - Statistical Methods in Natural Language Processing (Spring semester, 2011-now)
  - Speech Processing (Spring 2014)
  - Artificial Intelligence and Knowledge Engineering (Spring 2014)
  - Programming with Python (Fall 2010)
  - Mathematics for Computational Linguistics (Fall semester, 2010-2011)
  - Technical English for Electrical and Computer Engineering (Fall 2010-now)
- Research and Science Campus, Azad University
  - Electronics Laboratory (Ten groups, 2005-2006)
  - General Mathematics (Two groups, 2005-2006)
  - Prerequisite Mathematics (Two groups- 2005-2006)

Journal papers

[1] Moradi, M., **Vazirnezhad, B.**, Bahrani, M., Commonsense knowledge extraction for Persian language: A combinatory approach, Journal of information processing and management, 2015.

[2] Sadeghi, S., **Vazirnezhad, B.**, Extractive summarization based on cognitive aspects of human mind for narrative text, Journal of signal and data processing, 2015.

[3] **Vazirnezhad, B.**, Soltanzadeh, F., Mahdavi, M. M., Moradi, M., Sharif text editor: A Persian editor and spell checker system, Journal of signal and data processing, 2015.

[4] Soltanzadeh. F., Kowsarifard. Z., **Vazirnezhad, B.**, Design of an automatic medical question answering system, Journal of signal and data processing, 2015.

[5] Rahimi, A., **Vazirnezhad, B.,** Eslami, M., Sonority distribution in consonant clusters in syllable boundary in Persian, Journal of Language Research, 2015.

[6] Rahimi, A., **Vazirnezhad, B.**, Eslami, M., P-Analysis: Dispersion and neutralization of acoustic cognitive cues in Persian lexicon, Advances in Cognitive Science, Vol.16, No. 2, 2014.

[7] Rahimi, A., **Vazirnezhad, B.**, Eslami, M., Sonority sequencing principle in Persian, Journal of signal and data processing, Vol. 11, No.1, 2014.

[8] Ramazani, N., Oskoei, H. R. D., **Vazirnezhad, B.,** Proposing wireless network security by joint physical security and signcryption scheme, Journal of Information Security Research, Vol. 4, No. 4, 195-204, Dec. 2013.

[9] Mavaji, V., Eslami, M., **Vazirnezhad, B.**, Pars Morph: A persian morphological analyzer, Journal of Signal and Data Processing, Vol. 15, Issue 1, 2012.

[10] Shafiee, S., Almasganj, F., **Vazirnezhad, B.**, Jafari, A., 2010. A two stage speech activity detection system considering fractal aspects of prosody, Journal of pattern recognition letters, Vol. 31, 936-948. (ISI-Elsevier- science direct)

[11] **Vazirnezhad, B.**, Almasganj, F., Ahadi, S. M., 2009. Hybrid statistical pronunciation models designed to be trained by a medium-size corpus, **Computer**

Speech and Language, Vol. 23, Issue 1, 1-24, [doi:10.1016/j.csl.2008.02.001]. (ISI- Elsevier- science direct)

[12] **Vazirnezhad, B.**, Almasganj, F., Ahadi, S. M., 2009, Speaker adapted dynamic lexicons containing phonetic deviations of words. Journal of Zhejiang University, Vol. 10, Issue 10, 1461-1475, [doi:10.1631/jzus.A0820761]. (ISI- Springer)

[13] Patrick, J., Wang, Y., Budd, P., Rector, A., Brandt, S., Rogers, J., Herkes, R., Ryan, A., **Vazirnezhad, B.**, 2009, Developing SNOMED CT subsets from clinical notes for intensive care service. Health Care and Informatics Review, published online. (ISI)

[14] **Vazirnezhad, B.**, Almasganj, F., 2007. Hybrid statistical static and dynamic models to generate pronunciation variants of words, Journal of Computer Science and Engineering, Vol. 5, Issue 1-a, 28-40.

[15] **Vazirnezhad, B.**, Moradi, M. H., 2006. Evaluation of discriminative features extracted from sustained vowel to classify normal and pathological speech, Journal of Signal and Data Processing, Vol. 2, Issue 8, 71-80.

[16] **Vazirnezhad, B.,** Almasganj, F., Bijankhan, M., 2005. Automatic extraction of contextual rules and generating phonetic variants of words to be used in automatic continuous speech recognition, Journal of Computer Science and Engineering, Vol. 3, Issue 3-a, 23-30.

Conference papers

[1] Saffari, E., Meghdari, A., **Vazirnezhad, B.**, Alemi, M., Speaker localization in noisy environments: design and implementation of a robotic hearing apparatus, 3rd international conference on Robotics and Mechatronics (IEEE-ICROM), Tehran, Oct. 2015.

[2] Saffari, E., Meghdari, A., **Vazirnezhad, B.**, Alemi, M., AVA- a social robot: Design and implementation of a robotic hearing apparatus, International Conference on Social Robotics (ICSR), Paris, Oct. 2015.

[3] Rohanian, M., **Vazirnezhad, B.**, Rohanian, M., Sharif Spam corpus: A spam filter dataset for the Persian language, IEEE 10th International Conference on Information Technology and Applications, Sydney, Jul. 2015.

[4] Soltanzadeh, F., Kowsarifard, Z., **Vazirnezhad, B.**, Automatic medical question answering system for Persian, IEEE 10th International Conference on Information Technology and Applications, Sydney, Jul. 2015.

[5] Rohanian, M., Ghafari, K. M., **Vazirnezhad, B.**, Designing a morphological analyzer for Persian using a two-level morphology model, In proc. of the 3rd computational linguistics conference, Tehran, Nov. 2014.

[6] Rahimi, A., **Vazirnezhad, B.**, Eslami, M., P-trac procedure: The dispersion and neutralization of contrasts in lexicon, In proc. of the global conference on linguistics and foreign language teaching, Antalya, Dec. 2013.

[7] Rahimi, A., Eslami, M., **Vazirnezhad, B.**, It is not all downhill from here: syllable contact law in Persian, In proc. of the global conference on linguistics and foreign language teaching, Antalya, Dec. 2013.

[8] Soltanzadeh, F., **Vazirnezhad, B.**, A system for automatic spell correction for Persian text in the web, In proc. of the 1st congress of Persian language and the web, Tehran, Sep. 2013.

[9] Darmian, N. R., Oskoei, H., **Vazirnezhad, B.,** Proposing a hybrid protocol for secure wireless networks based on signcryption scheme, In proc. of IEEE- computer and information technology, Sousse, Tunisia, June 2013.

[10] Khaki, B., Gili, M., **Vazirnezhad, B.,** Ghavidel, H. A., Improving the performance of a POS tagger system considering inflectional and derivational operations, In proc. of the 5th information and knowledge technology conference (IKT), Shiraz, June 2013.

[11] Ghavidel, H. A., **Vazirnezhad, B.**, Bahrani, M., Moradi M., A hybrid classifier for persian documents, In proc. of the 4th information and knowledge technology conference (IKT), Babol, 2012.

[12] Moradi M., **Vazirnezhad, B.**, Khosravizadeh, P., Abdi Ghavidel, H., Extracting generic sentences from Persian Wikipedia, In proc. of the 4th information and knowledge technology conference (IKT), Babol, 2012.

[13] Farsinejad, A., **Vazirnezhad, B.**, Persian POS tagger enhanced with knowledge of langauge, In proc. of the 4th information and knowledge technology conference (IKT), Babol, 2012.

[14] Rahimi, A., **Vazirnezhad, B.**, Eslami, M., Sonority sequencing in consonant cluster of syllable contact in Persian, In proc. of the 2nd computational linguistics conference, Tehran, Nov. 2012.

[15] Ghavidel, H. A., Bahrani, M., **Vazirnezhad, B.**, Automatic Detection and Disambiguation of Metaphorical and Metonymic Concepts, In proc. of the 2nd computational linguistics conference, Tehran, Nov. 2012.

[16] Moradi, M., **Vazirnezhad, B.,** Web as a corpus: Developing a labeled corpus from the web, In proc. of the 2nd computational linguistics conference, Tehran, Nov. 2012.

[17] Patrick, J., **Vazirnezhad, B.**, Budd, P., Wang, Y., Cheng, Y., The generic clinical ontology viewer. In proc. of the 17th Iranian conference on electrical engineering (ICEE2009), Tehran, 2009.

[18] Patrick, J., Wang, Y., Budd, P., Rector, A., Brandt, S., Rogers, J., Herkes, R., Ryan, A., **Vazirnezhad, B.**, Developing classification subsets from clinical notes for intensive care service. In proc. of the 7th annual conference & exhibition of Health Informatics New Zealand (HINZ), Rotorua, New Zealand, 2008.

[19] Patrick, J., Wang, Y., **Vazirnezhad, B.**, Rector, A., Grade, S., Rogers, J., Herkes, R., Ryan, A., Inductive inference of a SNOMED CT subset for intensive care services. In proc. of the 3rd International Conference on Knowledge Representation in Medicine (KR-MED), p. 122, Phoenix, Arizona, US, 2008.

[20] **Vazirnezhad, B.**, Almasganj, F., Bijankhan, M., A hybrid statistical model to generate pronunciation variants of words. In proc. of IEEE- Natural Language Processing and Knowledge Engineering (IEEE NLP-KE), pp. 106- 110, Wuhan, 2005.

[21] **Vazirnezhad, B.**, Seyed Salehi, S. A., Almasganj, F., Modeling pronunciation variation in automatic speech recognizers using artificial neural networks. In proc. of the 2nd information and knowledge technology conference (IKT), Tehran, 2005.

[22] **Vazirnezhad, B.**, Moradi, M. H., Evaluation of three features based on short-time fractal dimension and formant specifications for automatic differentiation between normal and pathologic speech. In proc. of the 2nd information and knowledge technology conference (IKT), Tehran, 2005.

[23] **Vazirnezhad, B.**, Moradi, M. H., Automatic detection of human voice disorders by processing of speech, In Proc. of 13th International Conference in Electrical Engineering (ICEE), Zanjan, 2005.

[24] **Vazirnezhad, B.**, Almasganj, F., Bijankhan, M., Modeling pronunciation variants of words by contextual rules in a Persian continuous speech recognition system. In proc. of the 1st information and knowledge technology conference (IKT), pp. 137-145, Tehran, 2003.

Graduate Thesis Supervision

[1] Omid Rohanian, *A System for Converting Visual Data to Linguistic Description based on Machine Learning and Computer Vision Algorithms*, From Oct 2014.
[2] Sima Rezaei, *Consonant Perception Evaluation in Listeners: The Effects of Phonological Distinctive Features and the Context*, From Oct 2014.
[3] Ehsan Saffari, *Speaker Localization in Noisy Environments: Design and Implementation of a Robot Auditory System*, From Oct 2014.
[4] Sareh Sadeghi, *Design of an Extractive Summarization System based on Cognitive Processes of Human Mind for Text Perception*, From Oct 2012 to Jan 2014.
[5] Basira Khaki, *Latent Topic Modeling for Persian Document Classification*, From Oct 2012 to Jan 2014.
[6] Afshin Rahimi, *Sonority Sequencing Principle in Persian Phonotactics and its role in Robust Speech Perception*, From Oct 2011 to Jan 2013.
[7] Mehdi Moradi, *Commonsense Knowledge Extraction for Persian Language: A Combinatory Approach*, From Oct 2011 to Jan 2013.
[8] Hadi Abdi Ghavidel, *Automatic Detection and Disambiguation of Metaphorical and Metonymic Concepts*, From Oct 2011 to Jan 2013.
[9] Vahid Mavaji, *Designing and Implementing a Morphological Analyzer for Persian Language*, From Oct 2011 to Jun 2012.

Selected funded research projects

[1] "Text processing for extracting mental models of individuals or team, through cognitive-linguistics processing of text and speech" Speech and Language Processing Laboratory, Sharif University of Technology, 2015.
[2] "Design and implementation of a text comprehension and summarization system inspired by human mind" Speech and Language Processing Laboratory, Sharif University of Technology, 2015.
[3] "Implementing speech quality and intelligibility assessment methods and related databases for Persian language", Speech and Language Processing Laboratory, Sharif University of Technology, 2013.
[4] "Phonetic pronunciation variation modeling to generate a dynamic adaptive lexicon in continuous speech recognition systems and conversational speech synthesis systems", Speech and Language Processing Laboratory, Sharif University of Technology, 2011.
[5] "Speech enhancement module in wireless communication system", Speech and Language Processing Laboratory, Sharif University of Technology, 2009-2010.
[6] "Speech activity detection in handheld wireless radios", Tele-Com research center, Tehran, 2009-2010.
[7] "Conversational Persian speech synthesizer based on unit-selection method", Tele-Com research centre, Tehran, 2009-2010.

[8] "Developing a text independent speaker identification system over various channels", Research Center for Intelligent Signal Processing (RCISP), Tehran, 2008-2009.

[9] "Mapping medical query to ontology as an infra-structure for natural language processing for clinical text", University of Sydney, School of Information Technologies, sabbatical leave, 2007- 2008.

[10] "Developing a generic Thesaurus, Terminology, Ontology and Classification (TTOC) web-based browser for medical TTOCs including SNOMED CT, Apache, NIC and NOC", University of Sydney, School of Information Technologies, sabbatical leave, 2007- 2008.

[11] "Developing a word spotting system in spontaneous telephony speech", Research Center for Intelligent Signal Processing (RCISP), Tehran, 2006- 2007.

[12] "Development of SHENAVA, a Persian Continuous Speech Recognizer- pronunciation variation modeling in the lexicon", Amirkabir University of Technology (AUT) and Research Center of Intelligent Signal Processing (RCISP), Tehran, 2001-2006.

[13] "Automatic detection of human voice disorders by processing of sustained vowels", Joint research project by Research Center for Intelligent Signal Processing (RCISP) and Tehran University, 2003- 2004.

Awards and honors

- Member of Iran National Foundation of Elites (2009)

Language skills

- Persian (Farsi)- native
- English- speak, read and write with high proficiency
- Arabic- basic competence

Professional references

- Prof. Jon David Patrick, Professor of Computer Engineering, Chairs of Language Technology and Information Systems at the Sydney University, email: jonpat@healthll.com.au
- Prof. Ali Meghdari, Professor of Robotics, former Vice President of Academic Affairs and Head of the Center of Excellence in Design, Robotics and Automation and at Sharif University of Technology, email: meghdari@sharif.edu
- Prof. Hossein Sameti, Professor of Computer Engineering, Head of Computer Engineering Department and Director of Speech Processing Research Group at Sharif University of Technology, email: sameti@sharif.edu