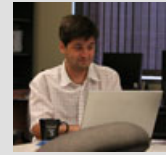


# Abe Kazemzadeh, Computer Scientist and Linguist

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## Education

- 2013:** Ph.D. in Computer Science, University of Southern California  
**2005:** M.S. in Computational Linguistics, University of Southern California  
**2002:** B.A. in Linguistics, Natural Science Minor, University of Southern California  
**Addn'l Coursework:** Huadong Shifan Daxue (Shanghai, China), University of Minnesota (Minneapolis, MN), and University of Wisconsin Eau Claire (Eau Claire, WI)

## Professional Experience

- Fall 2014 - Current:** **R&D/Data Science Computer Scientist**, Vixlet, LLC.  
Measured and produced a dashboard and reports for user metrics using Python, R, Postgres, MongoDB, and SystemD on Amazon Web Services.  
Designed and implemented chatbots for tennis trivia and to query user passions using Python and Docker.  
Prototyped biometric login using computer vision using Python, OpenCV, Caffe, CudaNN, and Cordova.
- Fall 2013 - Fall 2014:** **Senior Software Engineer**, Adly, Inc., Supervisor: Kim Scheibel  
Designed and implemented a machine-learning system for characterizing the demographics of followers of large Twitter accounts based on natural language processing of tweets and profile information, using Scikit-learn, Numpy, and Django.  
Implemented scalable, reliable, distributed systems for processing big data streams and web services using Docker and Amazon Web Services (Kinesis, DynamoDB, SQS, and S3).
- Fall 2012 - Fall 2013:** **Chief Technology Officer**, Annenberg Innovation Lab (AIL), University of Southern California School for Communications and Journalism, Supervisor: Jonathan Taplin  
Designed, implemented, and managed real-time social media analysis systems for news and entertainment that included live Mechanical Turk annotation.  
Interfaced with AIL staff, students, sponsors and collaborators on technical aspects of projects including programming, website design, computing infrastructure, technology transfer and open source strategies, power consumption, privacy, press releases, and internal communication.
- Fall 2002 - Fall 2012:** **Research Assistant**, University of Southern California, SAIL Lab, Supervisor: Shrikanth Narayanan  
Created applications for natural language human-computer interaction and managed large scale data collection, annotation, storage, and analysis.  
Developed speech processing techniques for child literacy assessment that were used in LA Unified school district.  
Developed methods for recognizing emotion in text that were applied to Twitter discussion of the 2012 US Presidential elections and Oscar movies.  
Developed VXML telephony applications for dialogs in English and Spanish for autism outreach.

- 2009 - 2010:** **Speech Recognition Audio Engineer**, Alelo Tactical Language Training, Science Team, Supervisor: Kevin Perry  
 Developed multilingual speech processing techniques used for language training and assessment of NATO peacekeeping and humanitarian forces.  
 Developed speech recognition testing and data warehousing framework for speech interaction data in Arabic, Dari, French, Indonesian, and Pashto.
- Summer 2008:** **Research Intern**, AT&T Shannon Laboratory (Florham Park, NJ), Speech Processing Division, Supervisor: Michael Johnston  
 Utilized social network structure for speech recognition grammar rescoring for a mobile, movies-on-demand application which resulted in a patent application.
- Summer 2007:** **C++ Programmer**, C++ Library for Audio and Music (CLAM) Project, Google Summer of Code, Advisor: Xavier Amatriain  
 Programmed vowel synthesis capabilities into an open-source C++/Qt sound library using a 2D control surface for the vowel space.
- Summers 2002, 2004:** **Research Assistant**, USC Institute for Creative Technologies (ICT), Supervisor: Andrew Gordon  
 Designed finite state machines to match the colloquial language used to express theory of mind concepts.
- Summer 2001:** **English Teacher in Shanghai**, Boren Scholar Study Abroad Program  
 Developed lessons and taught English as a second language for students of all ages.

## Honors and Awards

- Fiorella De Rosis Best Doctoral Consortium paper, Affective Computing and Intelligent Interaction (ACII2011) for Toward a Computational Model for Natural Language Descriptions of Emotions
- Second Best Student Paper in International Conference on Spoken Language Processing 2002 for Shin, J., S. Narayanan, L. Gerber, A. Kazemzadeh and D. Byrd (2002) Analysis of user behavior under errorful conditions in spoken dialogs
- USC Renaissance Scholar
- National Security Education Project (NSEP) Boren Fellowship to study in China
- Integrated Media Systems Center (IMSC) undergraduate research fellowship
- National Merit Scholar

## Professional Societies and Services

- Amateur Radio Technician Licence, call sign KK6RWQ
- Member: U.S. Coast Guard Auxiliary, Marina Del Rey Flotilla (District 11SR, Flotilla 12-07)
- Member: IEEE, ACM, and Acoustical Society of America
- Volunteer: Foundation for Arts, Mentoring, Leadership, and Innovation (FAMLI) and One Laptop Per Child (OLPC)
- Volunteer: Southern California Linux Expo (SCALE), 2008-2012
- Reviewer: several conferences and journals
- Vice President: USC Graduate Students in Linguistics, 2003-2004
- Volunteer: Preceptorship Program, L.A. County/USC hospital, 1999-2000

## Human Language Competence

- Native:** English
- Fluent:** Spanish (Latin American and Iberian)
- Intermediate:** Mandarin Chinese

**Limited** Indonesian, Farsi, French  
**(work/travel):**

## Artificial Language Competence

**Advanced:** Python, Perl5/CGI, Bash, Matlab, Formal Logic

**Significant experience:** C/C++, Javascript, Java, TCL, R, PHP

**Some experience:** Lisp/Scheme, ActionScript, Erlang, Ruby

## Publications

### Thesis:

- Natural Language Description of Emotion. Defended Spring 2013.

### Patent:

- System and method for speech-enabled access to media content, Michael Johnston and Abe Kazemzadeh, USPTO Application #: #20110082696, filed Apr. 2011.

### Peer-Reviewed Publications:

- Application of EmotionML, Felix Burkhardt, Christian Becker-Asano, Edmon Begoli, Roddy Cowie, Gerhard Fobe, Patrick Gebhard, Abe Kazemzadeh, Igmar Steiner, Tim Llewellyn. In 5th International Workshop on Emotion, Social Signals, Sentiment & Linked Open Data (ES3LOD), Reykjavik, Iceland, May 2014.
- Fuzzy Logic Models for the Meaning of Emotion Words, Abe Kazemzadeh, Sungbok Lee, and Shrikanth Narayanan. IEEE Computational Intelligence Magazine, Vol. 8, Issue 2, May 2013.
- SAIL: A hybrid approach to sentiment analysis, Nikolaus Malandrakis, Abe Kazemzadeh, Alexandros Potamianos, Shrikanth Narayanan, In Proceedings of NAACL HLT, Atlanta, Georgia, June 2013.
- A Sequential Bayesian Dialog Agent for Computational Ethnography, Abe Kazemzadeh, James Gibson, Juanchen Li, Sungbok Lee, Panayiotis Georgiou, Shrikanth Narayanan, In Proceedings of Interspeech, Portland, OR, Sept. 2012.
- Root-Word Analysis of Turkish Emotional Language, Ozan Cakmak, Abe Kazemzadeh, Dogan Can, Serdar Yildirim, Shrikanth Narayanan, Corpora for Research on Emotion Sentiment & Social Signals, 2012.
- Toward a Computational Model for Natural Language Descriptions of Emotions (Precis of Dissertation Proposal), Abe Kazemzadeh, In Proceedings of Affective Computing and Intelligent Interaction (ACII2011), Memphis, TN, Oct. 2011. Fiorella de Rosis Best Doctoral Consortium Paper Award.
- Emotion Twenty Questions (EMO20Q): Toward a Crowd-sourced Theory of Emotions Abe Kazemzadeh, Sungbok Lee, Panayiotis Georgiou, and Shrikanth Narayanan. In Proceedings of Affective Computing and Intelligent Interaction (ACII2011), Memphis, TN, Oct. 2011.
- EMO20Q Questioner Agent Abe Kazemzadeh, James Gibson, Panayiotis Georgiou, Sungbok Lee, and Shrikanth Narayanan. In Proceedings of Affective Computing and Intelligent Interaction (ACII2011), Memphis, TN, Oct. 2011
- Determining Which Question To Ask, with the Help of Spectral Graph Theory Abe Kazemzadeh, Sungbok Lee, Panayiotis Georgiou, and Shrikanth Narayanan. In Proceedings of Interspeech, Florence, Italy. August, 2011.
- An Interval Type-2 Fuzzy Logic System to Translate Emotion Words from Spanish to English. Abe Kazemzadeh In Proceedings of FUZZ-IEEE at The World Conference on Computational Intelligence (WCCI), Barcelona, Jul. 2010.
- An Interval Type-2 Fuzzy Logic System to Translate between emotion-related vocabularies. Abe Kazemzadeh, Sungbok Lee, and Shrikanth Narayanan. In Proceedings of First Interspeech, Brisbane, Australia, Sept. 2008.

- Using model trees for evaluating dialog error conditions based on acoustic speech information. Abe Kazemzadeh, Sungbok Lee, and Shrikanth Narayanan. In Proceedings of First International Workshop on Human-Centered Multimedia (ACM Multimedia), Santa Barbara, CA, October 2006.
- Automatic detection of voice onset time contrasts for use in pronunciation assessment. Abe Kazemzadeh, Joseph Tepperman, Jorge Silva, Hong You, Sungbok Lee, Abeer Alwan, and Shrikanth Narayanan. In Proceedings of InterSpeech ICSLP, Pittsburgh, PA, September 2006.
- Tball data collection: the making of a young children's speech corpus. Abe Kazemzadeh, Hong You, Markus Iseli, Barbara Jones, Xiaodong Cui, Margaret Heritage, Patti Price, Elaine Andersen, Shrikanth Narayanan, and Abeer Alwan. In Proceedings of Eurospeech, Lisbon, Portugal, October 2005.
- Acoustic correlates of user response to errors in human-computer dialogues. Abe Kazemzadeh, Sungbok Lee, and Shrikanth Narayanan. In Proceedings of IEEE ASRU, St. Thomas, U.S. Virgin Islands, December 2003.
- A text-free approach to assessing nonnative intonation. Joseph Tepperman, Abe Kazemzadeh, and Shrikanth Narayanan. In Proceedings of InterSpeech ICSLP, Antwerp, Belgium, August 2007.
- A Bayesian network classifier for word-level reading assessment Joseph Tepperman, Matthew Black, Sungbok Lee, Abe Kazemzadeh, Matteo Gerosa, Margaret Heritage, Abeer Alwan, and Shrikanth Narayanan. In Proceedings of InterSpeech ICSLP, Antwerp, Belgium, August 2007.
- A system for technology based assessment of language and literacy in young children: the role of multiple information sources. Abeer Alwan, Yijian Bai, Matt Black, Larry Casey, Matteo Gerosa, Margaret Heritage, Markus Iseli, Barbara Jones, Abe Kazemzadeh, Sungbok Lee, Shrikanth Narayanan, Patti Price, Joseph Tepperman, and Shizhen Wang. In Proceedings of IEEE International Workshop on Multimedia Signal Processing, Chania, Greece, October 2007.
- A study of emotional speech articulation using a fast magnetic resonance imaging technique. Sungbok Lee, Erik Bresch, Jason Adams, Abe Kazemzadeh, and Shrikanth Narayanan. In Proceedings of InterSpeech ICSLP, Pittsburgh, PA, September 2006.
- Pronunciation verification of children's speech for automatic literacy assessment. Joseph Tepperman, Jorge Silva, Abe Kazemzadeh, Hong You, Sungbok Lee, Abeer Alwan, and Shrikanth Narayanan. In Proceedings of InterSpeech ICSLP, Pittsburgh, PA, September 2006.
- An articulatory study of emotional speech production. Sungbok Lee, Serdar Yildirim, Abe Kazemzadeh, and Shrikanth Narayanan. In Proceedings of Eurospeech, Lisbon, Portugal, October 2005.
- Investigating the role of phoneme-level modifications in emotional speech resynthesis. Murtaza Bulut, Carlos Busso, Serdar Yildirim, Abe Kazemzadeh, Chul Min Lee, Sungbok Lee, and Shrikanth Narayanan. In Proceedings of Eurospeech, Lisbon, Portugal, October 2005.
- An articulatory study of emotional speech production. Sungbok Lee, Serdar Yildirim, Abe Kazemzadeh, and Shrikanth Narayanan. In Proceedings of Eurospeech, Lisbon, Portugal, October 2005.
- Pronunciation variations of spanish-accented english spoken by young children. Hong You, Abeer Alwan, Abe Kazemzadeh, and Shrikanth Narayanan. In Proceedings of Eurospeech, Lisbon, Portugal, October 2005.
- Emotion recognition based on phoneme classes. C. M. Lee, S. Yildirim, M. Bulut, A. Kazemzadeh, C. Busso, Z. Deng, S. Lee, and S. Narayanan. In Proceedings of ICSLP, Jeju, Korea, October 2004.
- An acoustic study of emotions expressed in speech. S. Yildirim, M. Bulut, C. M. Lee, A. Kazemzadeh, C. Busso, Z. Deng, S. Lee, and S. Narayanan. In Proceedings of ICSLP, Jeju, Korea, October 2004.
- Recognizing expressions of commonsense psychology in English Text Andrew Gordon, Abe Kazemzadeh, Anish Nair, and Milena Petrova Proceedings of the 41st Annual Meeting of the Association for Computational Linguistics (ACL-2003) Sapporo, Japan, July 7-12, 2003.
- Analysis of user behavior under error conditions in spoken dialogs. Jongho Shin, Shrikanth Narayanan, Laurie Gerber, Abe Kazemzadeh, and Dani Byrd. In Proceedings of ICSLP, Denver, CO, 2002.

## Abstracts:

- Recognition of voice onset time for use in pronunciation modeling. Abe Kazemzadeh, Sungbok Lee, and Shrikanth Narayanan. J. Acoust. Soc. Am., 2005.
- Some articulatory details of emotional speech. Sungbok Lee, Serdar Yildirim, Murtaza Bulut, Abe Kazemzadeh, and Shrikanth Narayanan. J. Acoust. Soc. Am., 2005.