

Elijah Mayfield

Language Technologies Institute
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HIGHLIGHTS

Demonstrated research excellence with numerous refereed and invited publications in top-tier venues in the fields of computational linguistics and human-computer interaction.

Selected for the Siebel Scholarship, awarded annually for academic and leadership excellence to 80 students from the world's leading graduate schools.

Developed and popularized LightSIDE, an open source machine learning toolkit for text, enabling non-expert users to make use of state-of-the-art technology for real-world problems.

Introduced countless users, from a wide variety of backgrounds and expertise, to concepts from machine learning through a series of workshops, lectures, and one-on-one tutorials.

EDUCATION

Ph.D. in Language and Information Technology **2011-Present**
Language Technologies Institute, School of Computer Science, Carnegie Mellon University
Advisor: Carolyn Penstein Rosé

M.S. in Language Technology **2009-2011**
Language Technologies Institute, School of Computer Science, Carnegie Mellon University
Advisor: Carolyn Penstein Rosé

B.A. in Computer Science with Honors **2005-2009**
University of Minnesota, Morris

PROFESSIONAL EXPERIENCE

IBM T.J. Watson Research Center **2012**
Research Intern, Hawthorne, NY. Advised by Jennifer Lai
Developing a novel machine learning approach to expertise in professional correspondence

Bedford, Freeman, and Worth Publishers **2011**
Software Engineering Consultant
Designed and developed an online platform for large-scale automated essay assessment

Digikey Corporation 2008
Software Engineering Intern, Thief River Falls, MN.

The University Register 2005-2009
Managing Editor (2008-2009), Variety Editor (2007-2008), Online Editor (2005-2007)
Campus newspaper of the University of Minnesota, Morris

AWARDS

Siebel Scholarship 2011
Awarded annually for academic and leadership excellence to 80 students from the world's leading graduate schools. (\$35,000)

McCree Award for Mathematical and Computer Sciences 2009
Awarded to one student at the University of Minnesota, Morris (\$1,600)

Scholar of the College 2009
Awarded for research excellence at the University of Minnesota, Morris

Undergraduate Research Opportunities Program 2008
Awarded for undergraduate research at the University of Minnesota, Morris (\$1,400)

Grant-in-Aid Student Research 2007
Awarded for undergraduate research at the University of Minnesota, Morris (\$2,840)

Dean's List 2006-2009
Awarded for academic excellence at the University of Minnesota, Morris

PUBLICATIONS

(J) Journal Article (C) Conference Paper (W) Workshop/Less Selective Paper (B) Book Chapter

Discovering Habits of Effective Online Support Group Chatrooms (C)
Elijah Mayfield, Miaomiao Wen, Mitch Golant, and Carolyn Penstein Rosé
To appear in the *ACM Conference on Supporting Group Work (Group)*. 2012.

Hierarchical Conversation Structure Prediction in Multi-Party Chat (C)
Elijah Mayfield, David Adamson, and Carolyn Penstein Rosé
To appear in the *SIGDIAL Meeting on Discourse and Dialogue*. 2012.

LightSIDE: Open Source Machine Learning for Text (B)
Elijah Mayfield and Carolyn Penstein Rosé
In *The Handbook of Automated Essay Evaluation*. In Press.

Contrasting State of the Art Automated Scoring of Essays: Analysis[†] (C)
Mark Shermis and Ben Hamner
Presented at *National Council on Measurement in Education*. 2012.
[†]LightSIDE participated as an invited vendor

- The ACODEA Framework: Developing Segmentation and Classification Schemes for Fully Automatic Analysis of Online Discussions (J)
Jin Mu, Karsten Stegmann, **Elijah Mayfield**, Carolyn Penstein Rosé, and Frank Fischer
To appear in *The International Journal of Computer-Supported Collaborative Learning (ijCSCL)*. 2012.
- Historical Analysis of Legal Opinions with a Sparse Mixed-Effects Latent Variable Model (C)
William Yang Wang, **Elijah Mayfield**, Suresh Naidu, and Jeremiah Dittmar
To appear in the *Conference of the Association for Computational Linguistics (ACL)*. 2012.
- Group Composition and Intelligent Dialogue Tutors for Impacting Students Academic Self-Efficacy (C)
Iris Howley, David Adamson, Gregory Dyke, **Elijah Mayfield**, Jack Beuth, and Carolyn Penstein Rosé
To appear in the *Conference on Intelligent Tutoring Systems (ITS)*. 2012.
- Oh, Dear Stacy! Social Interaction, Elaboration, and Learning with Teachable Agents (C)
Amy Ogan, Samantha Finkelstein, **Elijah Mayfield**, Claudia D'Adamo, Noboru Matsuda, and Justine Cassell
To appear in the *Conference on Human Factors in Computing Systems (CHI)*. 2012.
- Computational Representations of Discourse Practices Across Populations in Task-Based Dialogue (C)
Elijah Mayfield, David Adamson, Alexander Rudnicky, and Carolyn Penstein Rosé
In the *International Conference on Intercultural Collaboration (ICIC)*. 2012.
- Data-Driven Interaction Patterns: Authority and Information Sharing in Dialogue (W)
Elijah Mayfield, Michael Garbus, David Adamson, and Carolyn Penstein Rosé.
In the *AAAI Fall Symposium on Building Representations of Common Ground with Intelligent Agents*. 2011.
- Transforming Biology Assessment with Machine Learning: Automated Scoring of Written Evolutionary Explanations (J)
Ross Nehm, Minsu Ha, and **Elijah Mayfield**
In the *Journal of Science Education and Technology (JOSTE)*. 2011.
- Recognizing Authority in Dialogue with an Integer Linear Programming Constrained Model (C)
Elijah Mayfield and Carolyn Penstein Rosé.
In the *Conference of the Association for Computational Linguistics (ACL)*. 2011.
- Gaining Insights from Sociolinguistic Style Analysis for Redesign of Conversational Agent Based Support for Collaborative Learning (B)
Iris Howley, Rohit Kumar, **Elijah Mayfield**, Gregory Dyke, and Carolyn Penstein Rosé
In *Productive Multivocality in the Analysis of Group Interactions*. In Press.

- A Multivocal Process Analysis of Social Positioning in Study Groups (B)
Iris Howley, **Elijah Mayfield**, and Carolyn Penstein Rosé
In *Productive Multivocality in the Analysis of Group Interactions*. In Press.
- Missing Something? Authority in Collaborative Learning (C)
Iris Howley, **Elijah Mayfield**, and Carolyn Penstein Rosé
In the *International Conference on Computer-Supported Collaborative Learning (CSCL)*. 2011.
- ACODEA: A Framework for the Development of Classification Schemes for Automatic Classification of Online Discussions (C)
Jin Mu, Karsten Stegmann, **Elijah Mayfield**, Carolyn Penstein Rosé, and Frank Fischer
In the *International Conference on Computer-Supported Collaborative Learning (CSCL)*. 2011.
- Linguistic Analysis Methods for Studying Small Groups (B)
Iris Howley, **Elijah Mayfield**, and Carolyn Penstein Rosé
In the *International Handbook of Collaborative Learning*. In Press.
- An Analysis of Perspectives in Interactive Settings (W)
Dong Nguyen, **Elijah Mayfield**, and Carolyn Penstein Rosé
In the *Workshop on Social Media Analysis at Knowledge Discovery and Data Mining (KDD)*. 2010.
- Using Feature Construction to Avoid Large Feature Spaces in Text Classification (C)
Elijah Mayfield and Carolyn Penstein Rosé.
In the *Conference on Genetic and Evolutionary Computation (GECCO)*. 2010.
- Sentiment Classification using Automatically Extracted Subgraph Features (W)
Shilpa Arora, **Elijah Mayfield**, Carolyn Penstein Rosé, and Eric Nyberg
In the *Emotion in Text Workshop at the North American Association for Computational Linguistics (NAACL)*. 2010.
- An Interactive Tool for Supporting Error Analysis for Text Mining (W)
Elijah Mayfield and Carolyn Penstein Rosé.
In the *Demo Session at the North American Association for Computational Linguistics (NAACL)*. 2010.
- Sentence Diagram Generation using Dependency Parsing (W)
Elijah Mayfield
In the *Student Research Workshop at the Conference of the Association for Computational Linguistics*. 2009.
- Optimizing Java Programs using Generic Types (W)
Elijah Mayfield, John Roth, Daniel Selifonov, Nathan Dahlberg, and Elena Machkasova
In the *Poster Session at the Conference on Object-Oriented Programming, Systems, Languages, and Applications (OOPSLA)*. 2007.

INVITED TALKS

- National Council on Measurement in Education, Vancouver, BC** 2012
"LightSIDE: Open Source Machine Learning for Text," 4/16/2012
- Carnegie Mellon University Dialogues on Dialogues, Pittsburgh, PA** 2010-2012
"Representing Discourse Practices Across Populations," 3/16/2012
"Authority and Information Sharing in Dialogue," 10/24/2011
"Recognizing Authority in Dialogue," 6/9/2011
"A Computational Model for Sociolinguistic Discourse Analysis," 11/19/2010

SELECTED PRESS

* Indicates direct interview

- * **e-Literate.** "What is Machine Learning Good For?" 5/6/2012
- * **Education Week.** "Study Supports Essay-Grading Technology." 4/25/2012
- New Scientist.** "AI graders get top marks for scoring essay questions." 4/25/2012
- NPR All Things Considered.** "Robot Eyes As Good As Humans When Grading Essays." 4/24/2012
- USA Today.** "Computer scoring of essays shows promise, analysis shows." 4/23/2012
- * **The Tartan.** "Researchers develop LightSIDE program for grading essays." 4/23/2012
- New York Times.** "Facing a Robo-Grader? Just Keep Obfuscating Mellifluously." 4/22/2012
- O'Reilly Radar.** "Automated essay-scoring software scores as well as humans." 4/19/2012
- Cleveland Plain-Dealer.** "Computers as good as humans in reading and scoring student essays." 4/16/2012
- Inside Higher Ed.** "A Win for the Robo-Readers." 4/13/2012
- Marginal Revolution.** "Ahem..." 4/13/2012
- NPR StateImpact.** "Computers Can Score Student Essays As Well As Humans, Study Finds." 4/12/2012

ACADEMIC SERVICE

- Hewlett Foundation Automated Student Assessment Prize** 2012
Invited Vendor
- 11-344 Machine Learning in Practice, Carnegie Mellon University** 2011, 2012
Teaching Assistant, Pittsburgh, PA
- Internship Program in Technology-Supported Education, IIIT Hyderabad** 2009, 2010
Teaching Assistant, Hyderabad, Andhra Pradesh, India
- Pittsburgh Science of Learning Center LearnLab Summer School** 2010
Teaching Assistant, Pittsburgh, PA
- University of Minnesota, Morris Computer Science Discipline** 2007-2009
Student Representative, Morris, MN
- University of Minnesota, Morris Faculty Affairs Committee** 2008-2009
Student Representative, Morris, MN
- Association for Computing Machinery Student Chapter** 2007-2008
President, Morris, MN

CSCI 1301 Problem Solving and Algorithm Development I

2006

Teaching Assistant, Morris, MN

All-University Senate Committee on Information Technology

2006

Student Representative, Minneapolis, MN

MISCELLANEOUS

Programming Languages: Java, Groovy, Perl, C, R, SQL

Additional Skills: Adobe Creative Suite, HTML, XML, LaTeX, Eclipse

GRE Scores: 800/800 Quantitative, 630/800 Verbal, 6.0/6.0 Analytical Writing