

# STEPHEN ROLLER

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## OBJECTIVE

Postdoctoral research position in an industrial or academic laboratory.

Industrial engineering positions with opportunities for publication most preferred.

## EDUCATION

### PH.D. IN COMPUTER SCIENCE

2017 – UNIVERSITY OF TEXAS AT AUSTIN

Thesis: Identifying Lexical Relationships and Entailments with Distributional Semantics

Advisor: Katrin Erk

Estimated graduation date: May 2017

### M.S. IN COMPUTER SCIENCE

2014 – UNIVERSITY OF TEXAS AT AUSTIN

Specialty in Natural Language Processing and Machine Learning; GPA 3.9/4.0

### B.S. IN COMPUTER SCIENCE

2010 – NORTH CAROLINA STATE UNIVERSITY

Valedictorian; GPA 4.0/4.0

## PROFESSIONAL EXPERIENCE

### DATA SCIENCE INTERN

SUMMER 2011 – HYPERPUBLIC INC., NYC

- Developed a keyword and “product extractor” from business descriptions and reviews.
- Product extractor became major selling point during subsequent Groupon acquisition.

### SOFTWARE DEVELOPMENT INTERN

SUMMER 2010 – TRANSLOC INC., RALEIGH, NC

- Developed software for automated correction of inaccurate and inconsistent geospatial data.
- Project used for Chicago Transit Authority, the third largest bus system in US.

### SOFTWARE DEVELOPER

2006-2008 – TENNIScores INC, CHARLOTTE, NC

- Web developer for tennis league management software; system administrator.
- Flagship product used by more than 250,000 players in 100 leagues across North America.

### VARIOUS CONSULTING POSITIONS

- Winter 2014: NLP consultant: application of Sentiment Analysis for social scientists.
- Spring 2010: Augmented Reality engineer (Reality+3D environment w/ object tracking).

## PUBLICATIONS

### JOURNAL ARTICLES

- I. Beltagy, Stephen Roller, Pengxiang Cheng, Katrin Erk, Raymond Mooney. Representing Meaning with a Combination of Logical and Distributional Models. Special Issue of Computational Linguistics on Formal Distributional Semantics, 2016.

### CONFERENCE PROCEEDINGS

- Stephen Roller, Katrin Erk. Relations such as Hypernymy: Identifying and Exploiting Hearst Patterns in Distributional Vectors for Lexical Entailment. EMNLP 2016.
- Stephen Roller, Katrin Erk. PIC a Different Word: A Simple Model for Lexical Substitution in Context. NAACL 2016.
- Ye Zhang, Stephen Roller, Byron Wallace. MGNC-CNN: A Simple Approach to Exploiting Multiple Word Embeddings for Sentence Classification. NAACL 2016.
- Stephen Roller, Katrin Erk, Gemma Boleda. Inclusive yet Selective: Supervised distributional hypernymy detection. COLING 2014.
- Stephen Roller and Sabine Schulte im Walde. A Multimodal LDA Model integrating Textual, Cognitive and Visual Modalities. EMNLP 2013.
- Sabine Schulte im Walde, Stefan Müller and Stephen Roller. Exploring Vector Space Models to Predict the Compositionality of German Noun-Noun Compounds. Starsem 2013.
- Stephen Roller, Mike Speriousu, Sarat Rallapalli, Ben Wing and Jason Baldridge. Supervised Text-based Geolocation Using Language Models on an Adaptive Grid. EMNLP 2012.
- Mike Dominguez, R Michael Young and Stephen Roller. Design and Evaluation of Afterthought, A System that Automatically Creates Highlight Cinematics for 3D Games. AIIDE 2011.
- Mike Dominguez, R Michael Young and Stephen Roller. Automatic Identification and Generation of Highlight Cinematics for 3D games. FDG 2011.

### WORKSHOPS

- Stephen Roller, Sabine Schulte im Walde. Feature Norms of German Noun Compounds. Multiword Expression Workshop of EACL 2014.
- Stephen Roller, Sabine Schulte im Walde and Silke Scheible. The (Un)expected Effects of Applying Standard Cleansing Models to Human Ratings on Compositionality. Multiword Expression Workshop of NAACL 2013.

### SHARED TASKS

- I. Beltagy, Stephen Roller, Gemma Boleda, Katrin Erk, Raymond Mooney. UTexas: Natural Language Semantics using Distributional Semantics and Probabilistic Logic. Semeval 2014.

## HONORS AND FELLOWSHIPS

- 2012 – 2013: Visiting Scholar at the University of Stuttgart. Stuttgart, Germany.
- 2010: Microelectronics and Computer Development Fellowship Recipient. Austin, TX.
- 2010: Outstanding Senior Award for Scholarly Achievement. Raleigh, NC.
- 2008: Northrop Grumman Fellowship Recipient. Raleigh, NC.

# TEACHING

## VARIOUS GUEST LECTURES

- Linear Algebra for Word Embeddings — UT, 04/2016
- Predicting Word Relationships with Distributional Semantics — UT, 10/2015
- Introduction to Neural Networks in Computational Semantics — UT, 04/2014
- Grounded Distributional Semantics — University of Stuttgart, 01/2013

# SERVICE

## CONFERENCE REVIEWING

ACL, EMNLP, NAACL (Best Reviewer 2016), EACL, IWCS, TextGraphs.

## VOLUNTEERING

2009: Developer for PackPulse, an effort to raise awareness of campus energy usage.  
2008: World Camp for Kids volunteer, raising HIV awareness for 13-17 year olds abroad.  
2007, 2008: Participant in Shack-a-Thon, a Habitat for Humanity fundraising event.

# SKILLS

## PRIMARY ENGINEERING SKILLS

Python (preferred language)

NumPy, TensorFlow, Theano, MapReduce (Hadoop), C, SQL, Java, Git, Bash, LaTeX

## SECONDARY ENGINEERING SKILLS

Scala, Go, C++, Ruby, C#, PHP, SVN, Prolog, Javascript, Photoshop, Unity3D

## NATURAL LANGUAGES

English (native), German (conversational)

## RANDOM ACHIEVEMENTS

Pull request merged into TensorFlow to fix an obscure segmentation fault.  
HackerNews account is over 9 years old, GitHub account is over 8 years old.  
Built my bicycle from spare parts.

# REFERENCES

Available upon request.