

# Sarah K Tyler

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**Summary:** As a Ph.D. student at the University of California Santa Cruz working under Yi Zhang, I research how personalization can improve search. I have also explored how context such as social networks, can impact a users search behaviors. My background includes machine learning, statistics and theory, with four years of industry experience at Lawrence Livermore National Laboratory.

## Education:

PhD in Computer Science from *University of California, Santa Cruz*, (Expected 2012)  
Information Retrieval and Knowledge Management (IRKM) Group  
Cumulative GPA: 4.00  
Advisor: Yi Zhang

BS in Computer Science from *Carnegie Mellon University*, May 2004  
Minors in English and Mathematical Sciences  
Cumulative GPA: 3.78

## Publications:

- ♦ **S. K. Tyler**, J. Teevan. Large Scale Query Log Analysis of Re-Finding. In the Third ACM International Conference on Web Search and Data Mining (WSDM '10) (*to appear*)
- ♦ **S. K. Tyler**, Y. Chi, S. Zhu, Y. Zhang. Ordering Innovators and Laggards for Product Categorization and Recommendation In ACM Recommender Systems (RecSys '09)
- ♦ **S. K. Tyler**, Y. Zhang. Open Domain Recommendation: Social networks and collaborative filtering. In Proceedings of the 4<sup>th</sup> International Conference on Advanced Data Mining And Applications, Chengdu, China (ADMA '08).  
(Journal Article accepted to Journal of Frontiers of Computer Science and Technology.)

## Industry Experience (Internships):

- Summer Research Assistant – *Microsoft Research (MSR)* Summer 2009  
Mentor: Jaime Teevan
- ♦ Large scale study of Re-finding behaviors.
  - ♦ Work published in WSDM February 2010
- Summer Research Assistant – *NEC Laboratories America* Summer 2008  
Mentor: Shenghuo Zhu
- ♦ Identified Innovators and Laggards based on time to review products.
  - ♦ Work published in ACM Recommender Systems October 2009.
- Informatics/Algorithms Division Intern - *BodyMedia, Inc* Summer 2003
- ♦ Implemented machine learning techniques including cross validation, and windowing.
  - ♦ Created models to detect activities such as stationary biking from measurements recorded via an armband which were included in the August 2003 release.

## Industry Experience (Full Time):

- Computer Scientist - *Lawrence Livermore National Laboratory* June 2004 to June 2008
- ♦ Advised several projects in my Text Consulting and Advising position, lending expertise to projects in other divisions.
  - ♦ Designed and implemented software utilizing current state-of-the-art research in the area of language technologies, natural language processing and machine learning.
  - ♦ Personally responsible for processing fourteen streams of data for entity extraction.

- ◆ Led small teams and worked independently on areas proven to be key wins for several projects across the Information Operations and Assurances Center (IOAC).
- ◆ Founded the Text Analysis Research Reading Group and was a member of the Graph Analysis Research Group.
- ◆ Mentored Summer Students for three years.
- ◆ Employed full time from June 2004 to September 2007. Employed part time once enrolled in PhD Program at UCSC.

#### Cited Works:

- ◇ Technical Report: May, D. W. and **Sarah K Tyler**. "Securing and Sharing Knowledge: Analyzing Risk in the Trade off Space." 2007.
- ◇ **Tyler, Sarah K**. "Finding the Missing Link: Improving Entity Extraction." Technical Talk given to Z Division on April 30<sup>th</sup>, 2007.
- ◇ **Tyler, Sarah K**. "What Human Language Technologies Can Do For You" Technical Talk given to the IOAC center on February 7th, 2007.
- ◇ **Tyler, Sarah K**. "Deducing Hidden Graph Structure: A Subgraph Matching Approach." Technical Talk given to the LLNL Graph Analysis Working Group on April 19<sup>th</sup> 2006.
- ◇ **Tyler, Sarah K**. "Text Analysis for Graphical Models." Poster presentation , Computing Applications and Research (CAR)'s Research and Technology Showcase, April 4<sup>th</sup> 2007.
- ◇ **Tyler, Sarah K**. "Semi Supervised Text Classification." Poster presentation, CAR's Research and Technology Showcase, November 3<sup>rd</sup> 2005. Won best poster in my division.

#### **Honor Societies & Fellowships:**

*National Science Foundation (NSF) Graduate Researcher Fellowship*

*Cota Robles Fellowship*

*Phi Beta Kappa* (<http://pbk.org>)

*National Society of Collegiate Scholars* (<http://nscs.org>)

#### **Professional & Scholarly Awards:**

Computing Research Association:

Honorable Mention, *Outstanding Undergraduate Award*

Lawrence Livermore National Laboratory:

*Peer Award*, Computations Directorate

*Spot Award*, Computations Directorate

*Certificate of Excellence*, Awarded by the Sponsor

Carnegie Mellon:

*Senior Leadership Award*

*University Honors*

#### **Technologies:**

Large scale applications written primarily in Java/C#. In situations where time and space were critical, development was in C/C++.

Utilized Cloud computing with Map/Reduce. Data sets often in the terabyte/petabyte range.

Used Weka and other ensemble programs for quick prototyping and rapid data exploration.

Experience with scripting languages such as Perl, Php, and Python as well as other object oriented and functional languages.

#### **Teaching Experience**

*Carnegie Mellon University:*

Tutor for 15-212, 15-251

Spring 2003

Met weekly to reiterate difficult concepts for several students struggling with functional programming (15-212: *Principles of Programming*) and theory (15-251: *Discrete Mathematics*).

Leader of 15-354 Homework Help Night

Fall 2002

Voluntarily created and led a weekly homework help night for students in *Computational Discrete Mathematics*. Met with half the class, worked on homework problems at the board and explained difficult concepts.

Teaching Assistant for 15-211

Fall 2001

Lectured a section of *Data Structures and Algorithms* and developed homework assignments.

**Additional Activities:**

Developed a reading ease analyzer based on Flesch, Fog, and Flesch-Kincaid approximations. Donated it to the *Logan Utah Public Library* for their adult literacy group on March 18<sup>th</sup> 2006