

Timothy F. Vieira

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EDUCATION

Bachelor of Science, University of Illinois Urbana-Champaign
Major: Computer Science, College of Engineering
Concentration: Artificial Intelligence and Machine Learning
Minor: Mathematics

EXPERIENCE

Associate Software Engineer

Fall 2009 - Present

Information Extraction and Synthesis Laboratory

Advised by: Andrew McCallum

Description: Research in Information Extraction and inference in very large factor graphs.

- Development of Factorie (<http://factorie.googlecode.com>), a probabilistic programming framework. Implementation of a competitive Named Entity Recognition and the Loopy Belief Propagation module.
- Development of Rexa (<http://rexa.info>), a scientific literature search engine. Most of my efforts were in improving the extraction of metadata from PDF documents crawled from the web.

Research Programmer

Fall 2008 - Summer 2009

Cognitive Computation Group (<http://l2r.cs.uiuc.edu/~cogcomp/>)

Advised by: Dan Roth

Description: Research in natural language processing and information extraction. Half of my efforts have been focused on developing a theory and system for reasoning about numeric and temporal quantities in the context of textual entailment, e.g., what makes two quantities equivalent to another? The other half is dedicated to maintaining, developing, and integrating the numerous modules of a large textual entailment System.

Project Leader

Summer 2008

Multimodal Information Access and Synthesis (<http://mias.uiuc.edu>)

Description: We built a vertical search engine for events in the Champaign-Urbana, IL area. This search engine aggregates results from a number of event listings and provides a novel search interface on top of an information retrieval engine. The search interface allows users to search for events using natural language queries, such as “musical performances this week near downtown Champaign” or “free all ages concerts in the next month.”

Student

Summer 2007

Multimodal Information Access and Synthesis (<http://mias.uiuc.edu>)

Description: We worked on a Content-Based Image Retrieval System.

Intern

Spring 2002 - Summer 2004

Housing and Development Software (<http://www.hdsoftware.com/>)

Description: I worked on the report generation and data entry system of our large data management system used by many government agencies.

TEACHING EXPERIENCE

Course Assistant

Summer 2008

University of Illinois Urbana-Champaign

Course: CS498FDS - *Foundations of Data Sciences*

Description: I gave several lectures, wrote assignments and conducted a weekly laboratory sessions where students take what they learned in class and applied it to real problems. Class size was about 30; students where both graduate and undergraduates from all over the US. Topics include: information theory, information retrieval, and machine learning.

Undergraduate Teaching Assistant

Spring 2008

University of Illinois Urbana-Champaign

Course: CS199ch - *Introduction to Programming: A Multimedia Approach*

Description: Development of course materials and content for this pilot course. Hands-on laboratory instruction for class of 10 students.

Undergraduate Teaching Assistant

Fall 2006 - Spring 2008

University of Illinois Urbana-Champaign

Course: CS173 - *Discrete Structures*

Description: Lead 2 discussion sections per week (≈ 25 students), I graded homework and exams, proctored exams, held office hours and review sessions (often in attendance of over 150 students).

PUBLICATIONS

Mark Sammons, Vinod Vydiswaran, Tim Vieira, Nikhil Johri, Ming-wei Chang, Dan Goldwasser, Vivek Srikumar, Gourab Kundu, Yuanchen Tu, Kevin Small, Joshua Rule, Quang Do, and Dan Roth, *Relation alignment for textual entailment recognition*, Text Analysis Conference (TAC), 2009.

SKILLS

Programming Languages:

- Python - I was the teaching assistant for a hands on introduction to programming course in Python. I've done a lot of scientific programming (with numpy/scipy), text processing, and CGI programming.
- Web development: JavaScript (prototype.js; script.aculo.us; <canvas> element; GreaseMonkey), PHP (MySQL; developing MediaWiki extensions); django web development framework; and extensive python CGI scripting.
- Scala - Extensive experience developing the factorie (probabilistic programming framework) and implemented applications of factorie such as Named Entity Recognition, Information Extraction from scientific literature (PDF documents), and Coreference Resolution systems.
- Java - Extensive experience in Java in both undergraduate and professional career. Much of the Machine Learning and Information Extraction applications I have worked on are written in Java using the Learning-Based Java framework; example applications include Numeric and Temporal Quantity Recognition, Named Entity Recognition, and Noun Phrase Coreference

Resolution.

- UNIX shell scripting (bash and csh)
- Physical Computing: Arduino micro-controller programming
- I have worked with Mathematica, Emacs Lisp, Prolog, L^AT_EX, Scheme (my first language), OCaml, Matlab, MIPS, and Flash/Actionscript on several small personal and class projects.

Technologies:

CGI, apache http server, POSIX system programming primitives (threading, networking, interprocess communication), MongoDB, SQL, xml-rpc, and XmlHttpRequest/AJAX.

Operating Systems:

Ubuntu (linux) is my primary operating system, I have 3+ years of experience developing under Windows XP + Cygwin.

Misc:

I am fluent in Portuguese.