Patrick Verga

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SUMMARY

Information retrieval researcher and software engineer with over 5 years of research and programming experience.

EDUCATION

UMASS AMHERST

PhD Computer Science
May 2017 (expected)

MS Computer Science
Dec 2014 - 3.6 GPA

BA Computer Science
BS Neuroscience
Minor Philosophy
May 2012 - 3.5 GPA

SKILLS

LANGUAGES

Java • Scala • Bash
Python • R

TOOLS

Unix • SQL • git • LaTeX
vim • IntelliJ • Maven

LINKS

Github:// **patverga**
LinkedIn:// **Patrick Verga**

EXPERIENCE

CENTER FOR INTELLIGENT INFORMATION RETRIEVAL | Researcher

May 2013 – Present | Amherst, MA

- Leveraged locality sensitive hashing and agglomerative clustering to identify authors of anonymous classified ads more effectively and on a larger scale than previous attempts (Java, Apache Mahout).
- Used entity-based query expansion retrieval model in the web retrieval track at the TREC 2014 conference (Scala).

TRIP ADVISOR | Software Engineering Intern

May 2013 – Aug 2013 | Newton, MA

- Improved logging to live site in order to collect user data that was previously unavailable to the team (Bash, Java).
- Created scripts for data aggregation (Postgres, Apache Hive).

BINDS LAB | Researcher

May 2011 – May 2013 | Amherst, MA

- Computationally modeled the neuroscientific mechanisms of reconsolidation in a kernel-based attractor neural network (Matlab).
- The model more accurately replicated biological experiments than previous attempts.

HOWARD HUGHES MEDICAL INSTITUTE | Research Intern

May 2010 – Aug 2010 | Amherst, MA

- Developed scripts (Matlab) to detect thalama-cortical sleep spindles in polysomnography signal data to facilitate the effects of sleep on learning.

PROJECTS

SMART PLANT / SENTIMENT ANALYSIS

- Arduino-based ``smart'' plant companion monitors moisture and sends alerts when thirsty.
- Built Twitter sentiment analysis model (Python, NumPy, scikit-learn) to re-tweet negative tweets when thirsty, positive after watering.

NATION STATES APP | Android development

- Lead the design and implementation working with another developer (Java, Android).
- Number one app for the online game Nation Sates with ~10k downloads.

PUBLICATIONS

[1] Laura Dietz and **Patrick Verga**. **UMass at TREC WEB 2014: Entity Query Feature Expansion using Knowledge Base Links**. In *Proceedings of the TREC 2014 Conference*, 2014.

[2] Dimitri Nowicki, **Patrick Verga**, and Hava Siegelmann. **Modeling Reconsolidation in Kernel Associative Memory**. *PloS one*, 8(8):e68189, 2013.

[3] Edward F Pace-Schott, Rebecca Spencer, Shilpa Vijayakumar, Nafis A K Ahmed, **Patrick W Verga**, Scott P Orr, Roger K Pitman, and Mohammed R Milad. **Extinction of conditioned fear is better learned and recalled in the morning than in the evening**. *Journal of psychiatric research*, 2013.

[4] Edward F Pace-Schott, **Patrick W Verga**, Tobias S Bennett, and Rebecca Spencer. **Sleep promotes consolidation and generalization of extinction learning in simulated exposure therapy for spider fear**. *Journal of psychiatric research*, 46(8):1036--1044, 2012.