Finn Kuusisto

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RESEARCH

My research is in machine learning and data mining, with applications in medicine. In particular, my work focuses on medical applications of uplift modeling, breast cancer prediction and overtreatment mitigation, adverse drug event prediction, integration of expert knowledge for model development, and personalized medicine in general.

TECHNICAL SKILLS

LANGUAGES

Java • Python • R • C# • C++ • C
Javascript • Prolog • Lua • LaTeX

TOOLS AND APIS

MySQL • Git • Weka • SciKit-Learn
Play Framework 2.0 • Flask Framework

COMMUNITY WORK

PEER REVIEWING

NIPS | 2015
AIStats | 2015
AMIA Annual Symposium | 2014-15

EDITORIAL WORK

ACM - XRDS Magazine
Department Editor
Jan 12 – Present
Editor for Back, a then-now comparison of technology fitting the issue theme.

LINKS

LinkedIn:// **finn-kuusisto**
Github:// **finnkuusisto**

EDUCATION

UNIVERSITY OF WISCONSIN - MADISON | Madison, WI

PhD | Computer Science (Machine Learning)
Expected Summer 2015
MS | Computer Science
September 08 - December 09

GUSTAVUS ADOLPHUS COLLEGE | St. Peter, MN

BA | Computer Science, Classics
August 03 - May 07
Magna Cum Laude • Phi Beta Kappa honor society • Eta Sigma Phi honor society
President's List • Dean's List • Cross Country • Track & Field

EXPERIENCE

UNIVERSITY OF WISCONSIN - MADISON | Madison, WI

Research Assistant | May 11 – Present
Research with Jude Shavlik, David Page, and Elizabeth Burnside in uplift modeling, breast cancer prediction, adverse drug event prediction, and personalized medicine.
Lecturer | June 10 - August 10
Lecturer for 8-week summer session of the intro CS course. Included development of course syllabus, preparing/grading assignments/exams, and supervising a TA.
Teaching Assistant | September 08 - May 11
Teaching assistant for the intro CS course. Included four semesters as a section instructor, and two semesters as a lab TA.

CONSULTING | Madison, WI

Data Science Consultant | November 14 – Present
Consultant work on various tasks in predictive modeling and data mining, including: Data collection and processing, design and implementation of predictive modeling pipelines, and model evaluation and selection.

PICKUP RUNNING LLC | Madison, WI

Co-Founder | May 11 – Present
Webapp for organizing group runs around Madison. Like pickup games for running.

OPEN SYSTEMS INTERNATIONAL | Plymouth, MN

Software Engineer | August 07 – August 08
Developed SCADA software for power systems, and worked on the compile team.

PUBLICATIONS

[1] F. Kuusisto, I. Dutra, M. Elezaby, E. Mendonca, J. Shavlik, and E. Burnside. Leveraging expert knowledge to improve machine-learned decision support systems. In *AMIA Joint Summits on Translational Science*, 2015.

[2] F. Kuusisto, I. Dutra, H. Nassif, Y. Wu, M. Klein, H. Neuman, J. Shavlik, and E. Burnside. Using machine learning to identify benign cases with non-definitive biopsy. In *IEEE International Conference on e-Health Networking, Applications & Services*, 2013.

[3] F. Kuusisto, V. Santos Costa, H. Nassif, E. Burnside, D. Page, and J. Shavlik. Support vector machines for differential prediction. In *European Conference on Machine Learning (ECML-PKDD)*, 2014.

[4] H. Nassif, F. Kuusisto, E. Burnside, D. Page, J. Shavlik, and V. Santos Costa. Score As You Lift (SAYL): A statistical relational learning approach to uplift modeling. In *European Conference on Machine Learning (ECML-PKDD)*, 2013.

[5] H. Nassif, F. Kuusisto, E. Burnside, and J. Shavlik. Uplift modeling with ROC: An SRL case study. In *International Conference on Inductive Logic Programming (ILP)*, 2013.

[6] J. Weiss, F. Kuusisto, K. Boyd, J. Liu, and D. Page. Machine learning for treatment assignment: Improving individualized risk attribution. In *AMIA Annual Symposium*, 2015.