Finn Kuusisto

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RESEARCH

My research is in machine learning and data mining, with a primary focus in biomedical applications. In particular, I work on employing clinical, genetic, and text data in predicting drug effects, treatment assignment, toxicity prediction, integration of expert knowledge, and precision medicine in general.

TECHNICAL SKILLS

LANGUAGES AND TOOLS

Python • Java • R • C# • C++ • C
Javascript • Prolog • Lua • LaTeX
SciKit-Learn • TensorFlow • Git
Weka • MySQL • Flask Framework

COMMUNITY WORK

PEER REVIEWING

NIPS | 2015, 17
ICML | 2016-17
AIStats | 2015-16
AMIA Joint Summits | 2016-17
AMIA Annual Symposium | 2014-15, 17
KAIS | 2015
Machine Learning | 2016

EDITORIAL WORK

ACM - XRDS Magazine | Jan 12 - Dec 15
Editor for Back, a then-now comparison of technology fitting the issue theme.

MENTORING

Mentor for local startups and undergraduates at Gustavus and UW-Madison.

LINKS

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

EDUCATION

UNIVERSITY OF WISCONSIN | Madison, WI
PhD | Computer Science | Jan 10 - Aug 15
MS | Computer Science | Sep 08 - Dec 09

GUSTAVUS ADOLPHUS COLLEGE | St. Peter, MN
BA | Computer Science, Classics | Aug 03 - May 07
Magna Cum Laude • Phi Beta Kappa • Eta Sigma Phi • Cross Country • Track & Field

EXPERIENCE

MORGRIDGE INSTITUTE FOR RESEARCH | Madison, WI
Postdoctoral Fellow | Jul 17 - Present
Postdoctoral Research Associate | Sep 15 - Jun 17
Research with the Regenerative Biology lab building predictive models of developmental toxicity from gene expression data, and doing text mining for cell reprogramming and drug repurposing.

UNIVERSITY OF WISCONSIN | Madison, WI
Research Assistant | May 11 - Aug 15
Research with Jude Shavlik, David Page, and Elizabeth Burnside in uplift modeling, breast cancer prediction, adverse drug event prediction, and precision medicine.
Lecturer | Jun 10 - Aug 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 | Sep 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 | Nov 14 - Aug 15
Consulting on data collection and processing, design and implementation of predictive modeling pipelines, and model evaluation and selection.

REMUGIO | Madison, WI
Co-Founder | Sep 14 - Present
Second-by-second feedback from viewers on video content.
gBeta Accelerator Summer 2016 • Madworks Accelerator Fall 2016

OPEN SYSTEMS INTERNATIONAL | Plymouth, MN
Software Engineer | Aug 07 - Aug 08

SELECTED PUBLICATIONS

[1] F. Kuusisto, V. Santos Costa, Z. Hou, J. Thomson, D. Page, and R. Stewart. Machine learning to predict developmental neurotoxicity with high-throughput data from 2d bio-engineered tissues. *In Submission*.

[2] F. Kuusisto, J. Steill, Z. Kuang, J. Thomson, D. Page, and R. Stewart. A simple text mining approach for ranking pairwise associations in biomedical applications. In *AMIA Joint Summits on Translational Science*, 2017.

[3] 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.

[4] 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.

[5] 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.

[6] 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.