

Finn Kuusisto

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OVERVIEW

My expertise is in machine learning and data science, with an emphasis on biomedical applications. I have worked with clinical, genetic, and text data in predicting drug effects, treatment assignment, precision medicine in general, and more recently with biopotential signals for intelligent human-computer interfaces. My life's work is aimed at using machine learning responsibly to improve human quality of life.

TECHNICAL SKILLS

LANGUAGES AND TOOLS

Python • Java • JS • C# • C++ • C
 \LaTeX • SciKit-Learn • TensorFlow
 Keras • PyTorch • Git • MySQL

SERVICE

PEER REVIEW

NIPS • ICML • AAAI • AISTATS • AMIA Informatics Summit • AMIA Annual Symposium • Machine Learning • KAIS • DAMI

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.

US AIR FORCE RESERVE

Currently assigned to the joint Department of the Air Force / MIT AI Accelerator. Previously served as a Cyber Operations Officer at the 911th AW.

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

UNIVERSITY OF WISCONSIN | MADISON, WI

DATA SCIENTIST | JAN 23 - PRESENT

Helping to establish the new Data Science Institute. Collaborative data science research with groups across campus and external non-profit and corporate partners.

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

Four semesters as an instructor, and two as a lab TA for the intro CS course.

FANTM | MADISON, WI

CO-FOUNDER | SEP 20 - DEC 22

Next-generation hardware and software for human-computer integration.

MORGRIDGE INSTITUTE FOR RESEARCH | MADISON, WI

POSTDOCTORAL FELLOW | JUL 17 - SEP 20

POSTDOCTORAL RESEARCH ASSOCIATE | SEP 15 - JUN 17

Research with the Regenerative Biology lab building predictive models of toxicity from gene expression, and doing text mining for cell reprogramming and drug repurposing. Includes mentoring graduate and undergraduate research assistants.

CONSULTING | MADISON, WI

DATA SCIENCE CONSULTANT | NOV 14 - AUG 15

OPEN SYSTEMS INTERNATIONAL | PLYMOUTH, MN

SOFTWARE ENGINEER | AUG 07 - AUG 08

SELECTED PUBLICATIONS

- [1] F. Kuusisto, D. Page, and R. Stewart. Word embedding mining for SARS-CoV-2 and COVID-19 drug repurposing. *[In Review]*.
- [2] 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 *IEEE International Conference on Machine Learning Applications*, 2019.
- [3] A. Movaghar, D. Page, M. Brilliant, J. Greenberg, J. Hong, L. S. DaWalt, K. Saha, F. Kuusisto, R. Stewart, E. Berry-Kravis, and M. R. Mailick. Data-driven phenotype discovery of *fmr1* premutation carriers in a population-based sample. *Science Advances*, 2019.
- [4] R. Kleiman, F. Kuusisto, I. Ross, R. Stewart, D. Page, and J. Weiss. Machine learning assisted discovery of novel predictive lab tests using electronic health record data. In *AMIA Informatics Summit*, 2019.
- [5] 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.
- [6] 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.
- [7] 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.