



Aalto University
School of Science
and Technology

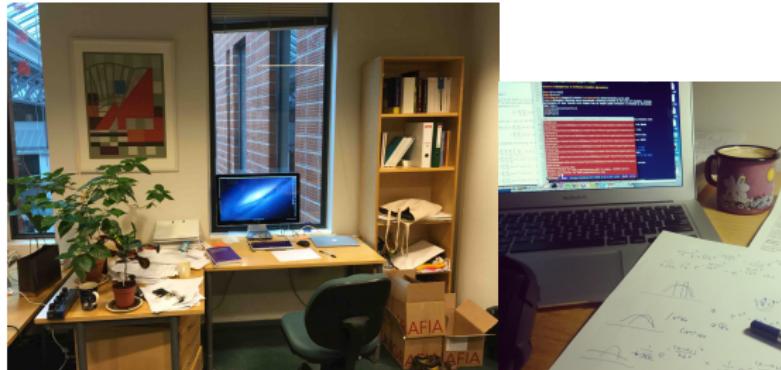
About me

Hongyu Su

Helsinki Institute for Information Technology HIIT
Department of Computer Science
Aalto University

December 1, 2015

- ▶ Hongyu Su
- ▶ Born 1984 (integrity, hard-work, open, creative)
- ▶ I am a postdoc in Helsinki Institute for Information Technology and Aalto University since 2015.5.
- ▶ Research: build advance machine learning models to solve large scale data analysis problem (research project).
- ▶ Equivalent to: continuously learning, thinking, implementing, reporting.



Educations



- ▶ Bachelor in Computer Science and Engineering, Xidian University, 2007
- ▶ Master in Bioinformatics, University of Helsinki, 2010
- ▶ Phd in Information and Computer Science, Aalto University, 2015
- ▶ '*Everything comes with a price. Everything. Some things just cost more than others.*' -Brom
- ▶ Some things don't have a price tag!

Phd, 2011.01-2015.04, Helsinki, Finland

- ▶ The topic is **machine learning and optimization research on structured data**.
- ▶ Machine learning is to estimate outcomes (unknown) from data (known).
- ▶ Ask non-trivial machine learning questions and provide solutions.
 - ▶ Computer vision, identify object in the image.


$$(+1, +1, -1, -1, -1, +1, +1)$$

boat sea sun beach people ice land

- ▶ News articles can be assigned to multiple categories.


$$(+1, +1, -1, -1, -1, -1, -1)$$

news economics sports politics movie science art

Results

Methods and technologies that are published in TOP machine learning journal and conference.

The collage consists of several academic paper abstracts and snippets, all related to structured output learning and multi-task classification. The snippets are arranged in a grid-like structure, with some overlapping. The titles and authors of the papers include:

- Multilabel Structured Output Learning with Random Spanning Trees of Max-Margin Markov Networks** (Hongyang Su, Marko Helminen, John Shawe-Taylor)
- Multi-task Drug Bioactivity Classification with Graph Labeling Ensembles** (Hongyu Su, John Shawe-Taylor)
- Multilabel Classification through Random Graph Ensembles** (Hongyu Su, John Shawe-Taylor)
- Structured Output Prediction of Anti-cancer Drug Activity** (Hongyu Su, Marko Helminen, John Shawe-Taylor)
- Multi-label Structured Output Learning with Random Spanning Trees of Max-Margin Markov Networks** (Hongyang Su, Marko Helminen, John Shawe-Taylor)
- Structured Prediction of Network Response** (Hongyu Su, John Shawe-Taylor)
- Multi-label classification through random graph ensembles** (Hongyu Su, John Shawe-Taylor)

Each snippet includes the author's name, affiliation, and a brief summary of the research. The snippets are overlaid with various annotations and arrows pointing to specific parts of the text, highlighting key concepts like "structured output learning", "multi-task classification", "graph labeling ensembles", and "random spanning trees". Some snippets also mention "KDD Cup 2012" and "IJCAI 2013".

Dissertation

- ▶ My dissertation **Multilabel classification through structured output learning - methods and applications**.
 - ▶ **Advanced** machine learning methods to push the boundary of multilabel classification.
 - ▶ Solving many real-world **nontrivial** machine learning problems: document classification, image annotations, molecular classification, bioinformatics, social network analysis.



Work hard for 4 years and then

- Defense



- Karonkka



- Phd



Awards (name vs money)

- ▶ Chinese government awards for outstanding Phd candidate



- ▶ Some awards from Aalto university.

What did I learn from Phd?

- ▶ Strong expertise in
 - ▶ Machine learning and mathematical modelings
 - ▶ Optimization research: linear/nonlinear optimizations
 - ▶ Algorithm and data analysis / recommender system
 - ▶ Large scale data analysis
- ▶ Solid programming skills in
 - ▶ Python, Matlab, C
 - ▶ Hadoop, Spark, SQL
 - ▶ SVN, Git, Jekyll, JavaScript
 - ▶ Website and blog at www.hongyusu.com
 - ▶ GitHub at www.github.com/hongyusu
- ▶ A creative brain to solve challenging problems with modern technologies.
- ▶ An open mind that always wants to learn.
- ▶ **Be able to work hard for the long-term goal.**

A big fan of sports

- ▶ I enjoy competitions and aggressive sport for example basketball.



- ▶ Now I try to discover unknown part of myself
 - ▶ Downhill snowboarding.
 - ▶ Bouldering (license)
 - ▶ Paragliding
 - ▶ Open water diving (license)
- ▶ A lot of gyms.

A cat person

- ▶ Pabulo



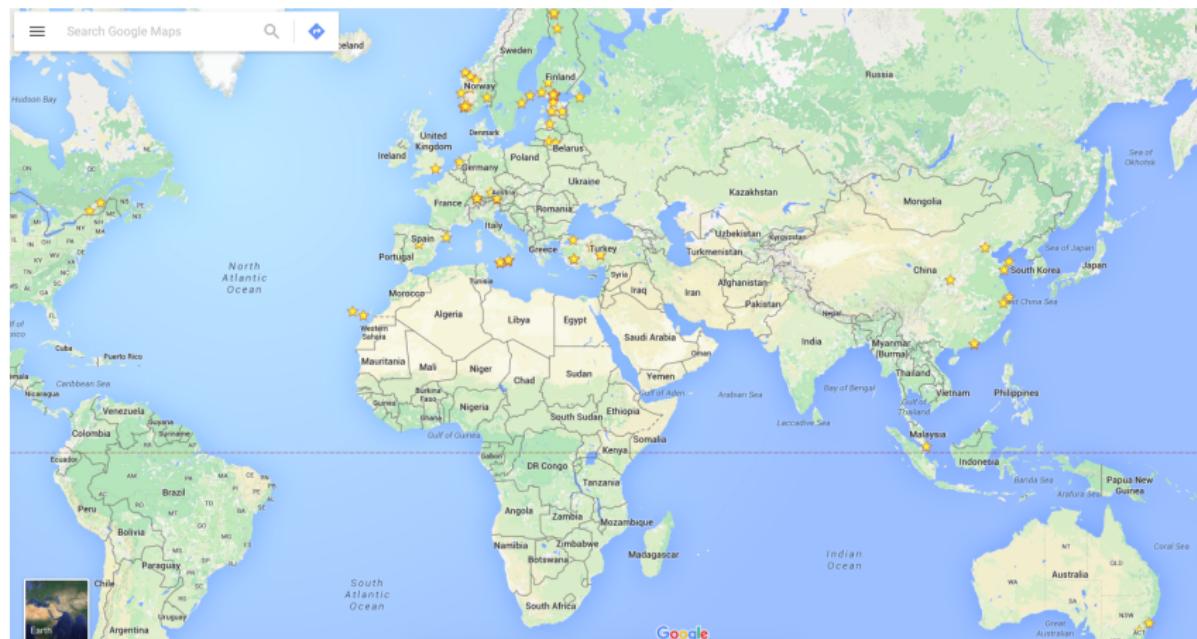
- ▶ Miu



- ▶ Cats are independent and make my life not very technical.

A hiker

I like to discover new places.



A photographer with a Flickr account

I like to memorize great moments.



A bottle collector

I like to taste new things.



'Stay hungry, stay foolish.' - Steve Jobs