



FDD3364 Statistisk inlärning 9,0 hp

Elements of Statistical Learning

När kurs inte längre ges har student möjlighet att examineras under ytterligare två läsår.

Fastställande

Kursplan för FDD3364 gäller från och med VT12

Betygsskala

Utbildningsnivå

Forskarnivå

Särskild behörighet

Undervisningsspråk

Undervisningsspråk anges i kurstillfällesinformationen i kurs- och programkatalogen.

Lärandemål

After successfully taking this course you will

- have a thorough overview and understanding - from derivation to implementation - of many of the established statistical supervised machine learning techniques (see course textbook for an overview),

- be able to apply and adjust a relevant subset of the techniques to your particular research problems,
- be able to describe a learning algorithm in terms of the trade-off it has made with respect to bias and variance,
- be aware of proper training and testing regimes for supervised machine learning problems with limited labelled training data.

Kursinnehåll

There will roughly be one lecture per chapter of the course book. However, the following chapters will be omitted Neural Networks, Undirected Graphical Models and Unsupervised Learning as these topics have better coverage in other courses at KTH and in other books such as the Christopher Bishop book Pattern Recognition. Some of the harder and more obscure details within each chapter will also be omitted. Even with these omission the book is still quite long. Therefore, the course will be split into two parts with potentially a break between the scheduling of the two parts. Here is a more detailed description of the content of the two parts of the course.

Kurslitteratur

The course will use the book Elements of Statistical Learning (second edition) by Trevor Hastie, Robert Tibshirani and Jerome Friedman, 2009. This is available for download on-line, but it is perhaps recommended that students buy it. Students may also find the book Modern Multivariate Statistical Techniques Regression, Classification, and Manifold Learning by Alan Julian Izenman an insightful companion to the main course book for some of the topics covered. It goes into greater depth on some of the issues.

Examination

Examinator beslutar, baserat på rekommendation från KTH:s handläggare av stöd till studenter med funktionsnedsättning, om eventuell anpassad examination för studenter med dokumenterad, varaktig funktionsnedsättning.

Examinator får medge annan examinationsform vid omexamination av enstaka studenter.

Etiskt förhållningssätt

- Vid grupparbete har alla i gruppen ansvar för gruppens arbete.
- Vid examination ska varje student ärligt redovisa hjälp som erhållits och källor som använts.
- Vid muntlig examination ska varje student kunna redogöra för hela uppgiften och hela lösningen.