Exam Preparation

Ralf Herbrich

Unit 1: Probability Theory

Unit 2: Inference and Decision Making

1. Inference Methods
   - Bayesian Inference
   - Maximum Likelihood Estimation
2. Decision Making

Unit 3: Graphical Models: Independence

Unit 4: Graphical Models: Inference

Unit 5: Bayesian Ranking

1. Ranking Problem
2. Probabilistic Ranking Models
3. TrueSkill: Expectation Propagation on Ranking Factor Graphs
4. TrueSkill Through Time

Unit 6: Linear Basis Function Models

Unit 7: Bayesian Regression

Unit 8: Bayesian Classification

Unit 9: Non-Bayesian Classification Learning

Unit 10: Gaussian Processes

Unit 11: Information Theory

1. Basics of Information Theory
2. Arithmetic Coding
3. Distance Measures for Probabilities

Unit 12: Real-World Applications

1. adPredictor: Bayesian Probit in e-Commerce
2. MatchBox: Bayesian Recommendation Systems
3. The Path of Go: Bayesian Pattern Ranking for Games

See you at the exam!