

Plan rada kursa Praktično mašinsko učenje

Group / Lecture	Method	Duration [hr]	Homework
Linear Algebra for Machine Learning		2	
- Scalars, Vectors, and Matrices	Lecture		
- Basic matrix operations	Lecture		
- Derivatives	Lecture		
- Identity and inverse matrices	Lecture		
- Norms	Lecture		
- Eigendecomposition	Lecture		
- Singular Value Decomposition	Lecture		
Elements of Numerical Optimization		2	
- Basic idea	Lecture		
- Gradient (Steepest) Descent	Lecture		Yes
- Quasi-Newton's Method	Lecture		
- Line search method	Lecture		Yes
Data Preprocessing		2	
- Normalization	Lecture and hands on		Yes
- Feature extraction	Lecture and hands on		
Unsupervised Machine Learning		4	
- Basics	Lecture		
- k-means	Lecture and hands on		
- Gaussian Mixture Models	Lecture		Yes
- Method performance evaluation	Lecture and hands on		
Supervised Machine Learning		8	
- Basics	Lecture		
- Linear regression	Lecture and hands on		
- Ridge and lasso regularization	Lecture and hands on		
- LDA / QDA	Lecture		
- Support Vector Machines	Lecture and hands on		
- kNN	Lecture		
- Decision Trees	Lecture and hands on		
- Neural Network Basis	Lecture		

Group / Lecture	Method	Duration [hr]	Homework
- Feature selection	Lecture and hands on		
- Method performance evaluation	Lecture and hands on		
Basis of Causal Analysis		2	
- Introduction to probabilities	Lecture		
- Introduction to graphs	Lecture		
- Causal Bayesian Networks	Lecture		
- Causal Models, Actions, and Counterfactuals	Lecture and hands on		
Final project		10	
- Description			
- Consultations			
- Students presentations			