COLT 2006 Program

The 19th Annual Conference on Learning Theory

June 22-25, 2006
Carnegie Mellon University
Pittsburgh, PA

COLT ’06 gratefully acknowledges financial support from Google, IBM Research, MLJ, NICTA, and Carnegie Mellon University.

WEDNESDAY June 21, 2006

Welcome Reception 7:00pm – 9:00pm
Holiday Inn University Center
100 Lytton Ave

Day 1 – THURSDAY June 22, 2006

Talks in Giant Eagle Auditorium, Baker Hall
Registration and check in: 8:30am – 9:20am

Session 1: 9:20am – 10:30am
Invited Talk: Luc Devroye
Session Chair: Gabor Lugosi
9:20 Conference Welcome (Avrim Blum)
9:30 Luc Devroye, Random Multivariate Search Trees

Break 10:30am – 10:50am

Session 2: 10:50am – 12:30pm
Clustering, Un-, and Semisupervised Learning
Session Chair: Phil Long
10:50 A Sober Look at Clustering Stability
Shai Ben-David, Ulrike von Luxburg, David Pal
11:15 PAC Learning Axis-aligned Mixtures of Gaussians with No Separation Assumption
Jon Feldman, Rocco Servedio, Ryan O’Donnell
11:40 Stable Transductive Learning
Ran El-Yaniv, Dmitry Pechyony
12:05 Uniform Convergence of Adaptive Graph-based Regularization, Matthias Hein

Lunch 12:30pm – 2:00pm
Rangos Hall, University Center

Session 3: 2:00pm – 3:40pm
Statistical Learning Theory
Session Chair: Alex Smola
2:00 The Rademacher Complexity of Linear Transformation Classes, Andreas Maurer
2:25 Function Classes that Approximate the Bayes Risk
Ingo Steinwart, Don Hush, Clint Scovel
2:50 Functional Classification with Margin Conditions
Magalie Fromont, Christine Tuleau
3:15 Significance and Recovery of Block Structures in Binary Matrices with Noise
Xing Sun, Andrew Nobel

Break 3:40pm – 4:00pm

Session 4: 4:00pm – 5:40pm
Regularized Learning and Kernel Methods
Session Chair: Ingo Steinwart
4:00 Maximum Entropy Distribution Estimation with Generalized Regularization
Miroslav Dudik, Robert Schapire
4:25 Unifying Divergence Minimization and Statistical Inference via Convex Duality
Yasemin Altun, Alex Smola
4:50 Mercer’s Theorem, Feature Maps, and Smoothing
Ha Quang Minh, Partha Niyogi, Yuan Yao
5:15 Learning Bounds for Support Vector Machines with Learned Kernels
Nathan Srebro and Shai Ben-David

Banquet at the Andy Warhol Museum
7:00pm – 10:00pm
Shuttle Buses depart Frew Street 6:15pm, Holiday Inn 6:30
Day 2 – FRIDAY June 23, 2006

Talks in Giant Eagle Auditorium, Baker Hall

Session 5: 9:00am – 10:40am
Query Learning and Teaching
Session Chair: Lisa Hellerstein

9:00 On Optimal Learning Algorithms for Multiplicity Automata, Laurence Bisht, Nader Bshouty, Hanna Mazzawi

9:25 Exact Learning Composed Classes With a Small Number of Mistakes, Nader Bshouty, Hanna Mazzawi

9:50 DNF are Teachable in the Average Case Homin Lee, Rocco Servedio, Andrew Wan

10:15 Teaching Randomized Learners Frank Balbach, Thomas Zeugmann

Break 10:40am – 11:00am

Session 6: 11:00am – 12:40pm
Inductive Inference
Session Chair: Thomas Zeugmann

11:00 Memory-limited U-Shaped Learning Lorenzo Carlucci, John Case, Sanjay Jain, Frank Stephan

11:25 On Learning Languages from Positive Data and a Limited Number of Short Counterexamples Sanjay Jain, Efim Kinber

11:50 Learning Rational Stochastic Languages Francois Denis, Yann Esposito, Amaury Habrard

12:15 Parent Assignment Is Hard for the MDL, AIC, and NML Costs, Mikko Koivisto

Lunch 12:40pm – 2:15pm
Attendees on their own

Session 7: 2:15pm – 3:55pm
Learning Algorithms and Limitations on Learning
Session Chair: Claudio Gentile

2:15 Uniform-distribution Learnability of Noisy Linear Threshold Functions with Restricted Focus of Attention Jeffrey Jackson

2:40 Improved Lower Bounds for Learning Intersections of Halfspaces, Adam Klivans, Alexander Sherstov

3:05 Efficient Learning Algorithms Yield Circuit Lower Bounds, Lance Fortnow, Adam Klivans

3:30 Active Sampling for Multiple Output Identification Shai Fine, Yishay Mansour

Break 3:55pm – 4:15pm

Session 8: 4:15pm – 5:55pm
Online Aggregation
Session Chair: Leon Bottou

4:15 Optimal Oracle Inequality for Aggregation of Classifiers under Low Noise Condition, Guillaume Lecue

4:40 Aggregation and Sparsity via $l_1$ Penalized Least Squares Florentina Bunea, Alexandre Tsybakov, Marten Wegkamp

5:05 A randomized online learning algorithm for better variance control, Jean-Yves Audibert

5:30 Online Tracking of Linear Subspaces Koby Crammer

Open Problem Session: 8:30pm – 9:00pm
Newell-Simon Hall, Room 3305
Session Chairs: Phil Long and Shai Ben-David

Business Meeting: 9:00pm – 10:30pm
Newell-Simon Hall, Room 3305

Day 3 – SATURDAY June 24, 2006

Talks in Giant Eagle Auditorium, Baker Hall

Session 9: 9:30am – 10:30am
Invited talk: Volodya Vovk
Predictions as Statements and Decisions
Session Chair: Sham Kakade

Break 10:30am – 10:50am

Session 10: 10:50am – 12:30pm
Online Prediction and Reinforcement Learning I
Session Chair: Nicolo Cesa-Bianchi

10:50 Online Learning with Variable Stage Duration Shie Mannor, Nahum Shimkin

11:15 Online Learning meets Optimization in the Dual Shai Shalev-Shwartz, Yoram Singer

11:40 Ranking with a P-Norm Push Cynthia Rudin

12:05 Online Multitask Learning Ofer Dekel, Philip Long, Yoram Singer

Lunch 12:30pm – 2:00pm
Attendees on their own
Session 11: 2:00pm – 3:40pm
Online Prediction and Reinforcement Learning II
Session Chair: Vladimir Vovk

2:00 The Shortest Path Problem Under Partial Monitoring
Andras Gyorgy, Tamas Linder, Gyorgy Ottucsak

2:25 Tracking the Best Hyperplane with a Simple Budget Perceptron
Nicolo Cesa-Bianchi, Claudio Gentile

2:50 Logarithmic Regret Algorithms for Online Convex Optimization
Elad Hazan, Adam Kalai, Satyen Kale, Amit Agarwal

3:15 Online Variance Minimization
Manfred Warmuth, Dima Kuzmin

Break 3:40pm – 4:00pm

Session 12: 4:00pm – 5:40pm
Online Prediction and Reinforcement Learning III
Session Chair: Jyrki Kivinen

4:00 Online Learning with Constraints
Shie Mannor, John Tsitsiklis

4:25 Continuous Experts and the Binning Algorithm
Jacob Abernethy, John Langford, Manfred Warmuth

4:50 Competing with Wild Prediction Rules
Volodya Vovk

5:15 Learning Near-optimal Policies with Bellman-residual Minimization Based Fitted Policy Iteration and a Single Sample Path
Andras Antos, Csaba Szepesvari, Remi Munos

Impromptu Session I: 8:00pm – 10:00pm
Session Chair: Avrim Blum
Newell-Simon Hall, Room 3305

Session 13: 9:30am – 10:30am
Invited talk: Gyorgy Turan
Learning and Logic
Session Chair: Hans Simon

Break 10:30am – 10:50am

Session 14: 10:50am – 11:40am
Other Approaches
Session Chair: Tong Zhang

10:50 Subset Ranking using Regression
David Cossock, Tong Zhang

11:15 Improving Random Projections Using Marginal Information
Ping Li, Trevor Hastie, Kenneth Church

Impromptu Session II: 11:40am – 12:30pm
Session Chair: Avrim Blum

***12:30pm Conference ends***

Day 4 – SUNDAY June 25, 2006

Talks in Giant Eagle Auditorium, Baker Hall
(Overlap Day with ICML)

Session 13: 9:30am – 10:30am
Invited talk: Gyorgy Turan
Learning and Logic
Session Chair: Hans Simon

Break 10:30am – 10:50am