CHUN-NAM YU

CONTACT INFORMATION

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EDUCATION

Cornell University

PhD candidate in Computer Science (with minor in Applied Mathematics)
Advisor: Thorsten Joachims (Computer Science)
Thesis committee members: Michael Todd (Operations Research),
Adam Siepel (Computational Biology)
August 2004 – Current (expected May 2010)

Wadham College, Oxford University, UK

B.A. in Mathematics & Computer Science (First Class Honours)
2001-2004

Diocesan Boys' School, Hong Kong

1994-2001

RESEARCH INTERESTS

I am interested in the question of how we can use machine learning to predict complex structured output objects such as trees, sequences, or subsets. I have worked on application problems such as learning to align protein sequences for homology modeling using structural SVMs. I also work on algorithm design problems, such as coming up with a new structural SVM formulation that allows the incorporation of latent variables. In addition to these I have also done work on improving the training efficiencies of these models using methods from optimization. My current research focus is on how we can utilize unlabeled data in the output domain Y to improve prediction accuracy when we are learning a structure-to-structure mapping from input domain X to output domain Y.

RESEARCH EXPERIENCE

Summer Intern at Yahoo! Research, Santa Clara

Worked under the supervision of Dr. Sathiya Keerthi and Dr. Olivier Chapelle on large-scale distributed SVM training using the open-source MapReduce implementation Hadoop. (Summer 2008)

Summer Intern at Siemens Medical Solutions, Computer Aided Diagnosis Group

Worked under the guidance of staff scientists Dr. Balaji Krishnapuram and Dr. Shipeng Yu on the problem of applying multiple view learning to the classification of tumor candidates in mammography. (Summer 2007)

TEACHING EXPERIENCE

Teaching Assistant for CS472 Foundations of Artificial Intelligence (Fall 2007)

Involved in designing homeworks, grading and guest lectures

Teaching Assistant for CS478 Machine Learning (Spring 2007, Spring 2008)

Responsible for designing homeworks and lecturing when instructor travels (TA award for spring 2007)

AWARDS

ECML/PKDD 2009 Best Machine Learning Paper Award (2009)
Teaching Assistant Award for CS478 Machine Learning (Spring 2007)
The Olin Fellowship (2004 - 2005)
Wadham College Scholarships (2002 – 2004)
The Corcoran Prize (First Public Exam, Maths & Joint School, 2002)
Lee Shau Kee Scholarship (for study at Oxford University, 2001 - 2004)

PROFESSIONAL ACTIVITIES

Program Committee member

Advances in Neural Information Processing Systems (NIPS) 2009
European Conference on Machine Learning (ECML) 2008

Journal Reviewing

Journal of Machine Learning Research (JMLR)
Journal of Artificial Intelligence Research (JAIR)
IEEE Transactions on Neural Networks
Data Mining and Knowledge Discovery
Information Retrieval
INFORMS Journal on Computing

Neurocomputing

Conference Paper Reviewing

NIPS 07, ICML 07, ICML 08, AAAI 07, AAAI 08

PUBLICATIONS

Journal Publications

T. Joachims, T. Hofmann, Y. Yue, C.-N. Yu, *Predicting Structured Objects with Support Vector Machines*, Communications of the ACM, Research Highlight, 52(11):97-104, November 2009

T. Joachims, C.-N. Yu, *Sparse Kernel SVMs via Cutting-Plane Training,* Machine Learning (ECML PKDD 2009 Special Issue), 2009, volume 76(2-3), pp179-193

T. Joachims, T. Finley, C.-N. Yu, *Cutting-Plane Training of Structural SVMs,* Machine Learning, 2009, volume 77(1)

C.-N. Yu, T. Joachims, R. Elber, J. Pillardy, *Support Vector Training of Protein Alignment Models,* Journal of Computational Biology, 2008, volume 15(7), pp867-880

Refereed Conference Publications

C.-N. Yu, T. Joachims, *Learning Structural SVMs with Latent Variables*, Proceedings of the 26th International Conference on Machine Learning (ICML), 2009, pp 1169-1176

T. Joachims, C.-N. Yu, *Sparse Kernel SVMs via Cutting-Plane Training,* European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML/PKDD), 2009

C.-N. Yu, T. Joachims, *Training Structural SVMs with Kernels Using Sampled Cuts*, Proceedings of the 14th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD), 2008, pp 794-802

C.-N. Yu, T. Joachims, R. Elber, J. Pillardy, *Support Vector Training of Protein Alignment Models*, Proceeding of the International Conference on Research in Computational Molecular Biology (RECOMB), 2007, pp 253-267

Talks and Workshop Presentations

IBM Student Open House on Statistical Machine Learning and its Applications (SMiLe), *Learning Structural SVM with Latent Variables*, October 2009

C.-N. Yu, T. Joachims, *Learning Structural SVM with Latent Variables*, NIPS 2008 Structured Input-Structured Output Workshop

C.-N. Yu, T. Joachims, R. Elber, *Training Protein Threading Models Using Structural SVMs*, ICML Workshop on Learning in Structured Output Spaces, 2006

REFERENCES

Available upon request

OTHER INFORMATION

Languages

English (fluent), Cantonese (native), Mandarin (fluent)

Programming Languages

C/C++, Matlab, Python, ML, Haskell, Prolog

Citizenship

Hong Kong SAR

US Immigration Status

F1 Student Visa