

RESEARCH INTERESTS

Machine Learning, Information Retrieval, Natural Language Processing

EDUCATION

2008.9~now, candidate for PhD degree in Language Technologies,

Language Technologies Institute (LTI), Carnegie Mellon University (CMU)

2006.9~2008.8, master degree in Language Technologies, LTI, CMU

2003.9~2006.7, master degree in information science,

Dept. of Computer Science, Tsinghua University (THU)

1999.9~2003.7, bachelor degree of Electronic Engineering,

Dept. of Electronic Engineering, THU

RESEARCH EXPERIENCE

◇ **Research Assistant:** (6/2009~present)

Advisor, Prof. William Cohen, wcohen@cs.cmu.edu, MLD,LTI/CMU

- Retrieval on entity relation graphs (to help biologist find information)
- Feature selection and hidden variable detection on relational data

◇ **Research Assistant:** (9/2007~5/2009)

Advisor, Prof. Teruko Mitamura, teruko@cs.cmu.edu, LTI/CMU

- Cross-lingual Question Answering System
- Compare different representations and learners for Chinese Semantic Role Labeling
- Dynamic CRFs structure learning for syntactic parsing

◇ **Research Assistant:** (7/2006~8/2007)

Advisor, Prof. Yiming Yang, yiming@cs.cmu.edu, LTI/CMU

- Random walk on graph for multi-task learning (Automatic Form Filling) and contextual retrieval (recommend problem resolutions for engineers)
- Evaluation metric for utility-based information distillation

◇ **Internship:** (7/2003~6/2006)

Web Search and Mining Group (WSM), Microsoft Research Asia (MSRA)

Mentor, Dr. Ji-Rong Wen, jrwen@microsoft.com

- Information integration problem of clustering and classifying online products.
- Evaluated different approaches of personalized search, by simulating user experience from search engine click-through data.
- Compared learning methods to improve search engine relevance performance.
- Devised an efficient method to deduce dampening factor in PageRank algorithm from a search engine ranking result
- System that combines system configuration, behavior log and user problem descriptions to help automatic PC troubleshooting.

◇ **Student Research Training Program:** (3/2001~6/2003)

State Key Lab of Intelligent Technology and Systems (LITS), THU

Advisor, Prof. Zeng-Qi Sun, szq-dcs@mail.tsinghua.edu.cn

- Bachelor thesis, "Mining Spatial-Temporal Data Using Constructive Induction".
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PROGRAMMING SKILLS

Extended experience in JAVA, C++, Matlab, R, SQL, Perl

AWARDS

◇ Graduate:

2005, **Best Originality Award**, BestRank Competition, MSRA

◇ Undergraduate:

2002, **Champion of RoboCup2002 Simulation League**, Fukuoka, Japan

2001, **Champion of RoboCup2001 Simulation League**, Seattle, U.S.A

2001, **Third Prize, Intelligent Agent Competition**, THU

1999, **Third Prize, Structure Design Competition**, Dept. of Civil Engineering, THU

◇ Before Undergraduate:

1998, **Bronze medal, NOI'98**, i.e. National Informatics Olympic Games, China

1997, **Bronze medal, NOI'97**, China

1996, **First prize, National Competition of Physics** for middle school, China

1994, **First place, competition of botany knowledge** for middle school, Gui-Yang City

PUBLICATIONS

N. Lao, J. Zhu, T. Mitamura, E. Nyberg, W. Cohen. Contrastive Feature Induction for Efficient Structure Learning of Conditional Random Fields. In submission.

N. Lao, T. Mitamura, E. Nyberg, Tree Representations for Chinese Semantic Role Labeling. In submission.

H. Shima, N. Lao, E. Nyberg, T. Mitamura. 2008. "**Complex Cross-lingual Question Answering as Sequential Classification and Multi-Document Summarization Task**", NTCIR-7 Workshop, Japan.

N. Lao, H. Shima, T. Mitamura, E. Nyberg. 2008. "**Query Expansion and Machine Translation for Robust Cross-Lingual Information Retrieval**", NTCIR-7 Workshop, Japan.

W. Zuo, N. Lao, Y. Geng, and K. Ma. 2008. GeoSVM: an efficient and effective tool to predict species' potential distributions. *Journal of Plant Ecology*, 1(2): 143-145.

Y. Yang, A. Lad, N. Lao, A. Harpale, B. Kisiel, M. Rogati, **Utility-based information distillation over temporally sequenced documents**, SIGIR, pp. 31-38, 2007

U.S. patent, **Method and System for Troubleshooting a Misconfiguration of a Computer System Based on Product Support Services Information**. 41826.8030US

C. Yuan; N. Lao; J. Wen; J. Li; Z. Zhang; Y. Wang; W. Ma, **Automated Known Problem Diagnosis with Event Traces**, EuroSys, 2006.

N. Lao, J. Wen, W. Ma, Y. Wang, **Combine High Level Symptom and Low Level State Information for Configuration Fault Diagnosis**, USENIX LISA, pp. 151-158, 2004.

J. Wen, N. Lao, W. Ma, **Probabilistic Model for Contextual Retrieval**, SIGIR, pp. 57-63, 2004

A. Ganapathi, Y. Wang, N. Lao, J. Wen, **Why PCs Are Fragile and What We Can Do About It: A Study of Windows Registry Problems**, Dependable System and Network (DSN), pp. 561-566, 2004.

J. Yao, N. Lao, F. Yang, Y. Cai, Z. Sun: **Technical Solutions of TsinghuAeolus for Robotic Soccer**. RoboCup, pp. 205-213, 2003
