

Kun Tu

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EDUCATION

- **University of Massachusetts Amherst (UMass), Amherst, MA** **expected 2015**
MS/Ph.D in Computer Science
Advisor: Hava T Siegelmann
- **South China University of Technology, China** **fall 2004 – fall 2008**
Master in Computer Science
Advisor: Zhifeng Hao
- **South China University of Technology, China** **fall 2000 – fall 2004**
Applied Mathematics

RESEARCH INTEREST:

Machine learning, Inference Engine, Information Retrieval, Data Mining, NLP

RESEARCH EXPERIENCE

- BINDS lab, Department of Computer Science, **University of Massachusetts Amherst**, Amherst, MA. 2007 - present
- *Commonsense reasoning for language understanding*: Built up a cognitive system based on the symbolic architecture to summarize articles and make inference to generate implicit information. Design modules to parse sentences in an article, extract entities and their relations into a semantic network. Construct common sense knowledge base by extracting potential causal relation between action/events from corpus. Construct Dynamic Bayesian Network from commonsense knowledge to make inference according to input information.
 - *Computational Cancer*: design and visualize the effect of artery in an agent-based model of breast cancer, we show that our agent signaling can be utilized to rid a tissue system of cancer cells, with different parameters.
- Shanghai Center for Bioinformatic Technology, **Chinese Academy of Science**, China 2006 - 2007
- *Protein 3D Structure prediction with patterns*: design models to detect a group of amino acid sequences that forms a specific structure. Applied supervised-learning to optimize parameters of the model.
 - *Protein sequence analysis*: use heuristic algorithm to solve multiple sequence alignment problem for protein sequence in bioinformatics.

SERVICE EXPERIENCE

- *Reviewer*: cognitive neurondynamic, Springer. 2011
- *Webmaster of ijcnn2011*: Design and maintain the webpage of ijcnn2011 Dec 2010 – Aug2011

TEACHING EXPERIENCE

Teaching Assistant, University of Massachusetts Amherst
CS311 Algorithm
CS348 Knowledge Discovery

spring 2012
fall 2011

REFERRED PUBLICATION

K. Tu, M. Olsen, H. T. Siegelmann, CIM for Improved Language Understanding, *The 10th International Symposium on Logical Formalization on Commonsense Reasoning*, 2011 Poster

K. Tu, Hava Siegelmann, Memory Model for Text Reasoning, *Northeast Student Conference on Artificial Intelligence*, 2010

K. Tu, D. Cooper, H.T. Siegelmann , “Memory reconsolidation for natural language processing”, *Cognitive Neurodynamics*, 2009 365-372

Kun Tu, Zhifenghao and Chen Ming. “PSO with improved strategy for Job-shop problem”. *Lecture Notes of Computer Science*, Advances in Natural Computation. 4222/2006 :145-156

Zhifeng Hao, Han Huang, Xili Zhang and Kun Tu. “A Time Complexity Analysis of ACO for Linear Functions”, *Lecture Notes in Computer Science, Simulated Evolution and Learning*. 4247/2006:

Zhifeng hao, Kun Tu and Xiaowei Yang. “Solving Multiple Sequence Alignment with position-based Genetic Algorithm”. *Dynamic of Continuous, Discrete and impulsive System*, 2006

AWARDS:

AAAI Spring symposium travel award 2010.

TECHNICAL SKILLS:

- Languages/Scripting: Java, C/C++, SQL
- Database/Data Access/Analysis: MySQL, JDBC, MATLAB, R, Weka,
- Cloud Computing: hadoop map-reduce

Graduate Courses:

- *Artificial Intelligence*: Artificial Intelligence; Machine Learning; Information Retrieval
- *Theory and Math*: Computational Complexity; Advanced Algorithms;
- *Systems*: Database Design & Implementation

REFERENCE:

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