

CHEN LIU

BASIC INFORMATION

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EDUCATION

2011-2015 B.E in COMPUTER SCIENCE & TECHNOLOGY
Tsinghua University, Beijing, China
GPA: 91.5/100
Rank: 9/123

RESEARCH INTERESTS

Natural Language Processing(NLP), Deep Learning(DL), Pattern Recognition(PR) and Machine Learning(ML)

RESEARCH EXPERIENCE

<i>Junly 2014</i>	Class-Based Summarization of Multi-Language Microblogs
<i>Mar 2014</i>	<i>Supervised by Hua Xu, Associate Processor</i> <i>National Laboratory for Information Science and Technology</i> In times of big data, there are millions of microblogs posted every day. It is necessary to generate summarizations of these microblogs automatically. However, many developed systems and algorithms like The Phrase Reinforcement and Hybrid TF-IDF ignores some context relations and performs poorly especially in Chinese corpus. This is partly because much more different or informal expression in microblog delivering the same meaning weaken the power of words-cooccurrence-based algorithms. My research focuses on designing a class-based algorithm to generate summaries of both English and Chinese microblogs. It firstly uses machine learning algorithms such as LogicLDA and Word2Vec to distribute words of the same meaning into one classification. Then we use a tree pattern reinforcement algorithms to generate summaries based on the classification in the first step.
<i>Current</i>	Recurrent Convolutional Neural Network for Sentence Classification
<i>Dec 2014</i>	<i>Supervised by Xiaolin Hu, Associate Processor</i> <i>National Laboratory for Information Science and Technology</i> Recently, convolutional neural network(CNN) has achieved great success in areas such as pattern recognition because of its fewer parameters and power to extract hierarchical features. By adding recurrent connections in CNN, the model called recurrent convolutional neural network(RCNN) can even extract hierarchical features within a layer. RCNN has already shown state-of-art poformance in object recognition. My work is to apply this technology to the field of NLP to solve the problem of sentence classification. Unlike objection recognition, I will build a new model combined classic CNN, RCNN and MLP to complete this task. This is partly because of the latent representation of words and flexible length of sentences. This project will be the base of my bachelor thesis.

PROJECTS & PROFESSIONAL SKILLS

Software-Level Projects

<i>Dec 2013</i>	A Multi-Tenants Customizable On-line Gaming Software
<i>Sep 2013</i>	An online game center supporting any games based on poker, the rule of which was written by users. <i>Golang, REVEL Framework, Html</i>
<i>Sep 2013</i>	A Users Behavior Analysis Tool on Android
	Two parts. Client is an Android application recording users' information, including position, time, temperature, motion and so on. Sever is a web service which can analyse users' information and communicate with the client. <i>Java, Android VM</i>
<i>Jun 2013</i>	A x86 Assembly Interpreter
	An interpreter supporting a subset of x86 instructions <i>C++</i>
<i>Jun 2013</i>	Mesh Simplification
<i>May 2013</i>	Implement mesh simplification algorithm to reduce the number of points in a 3D space describing an object and maintain its shape. <i>C++, OpenGL</i>
<i>Jun 2013</i>	Ray-Tracing Drawing
<i>Apr 2013</i>	Implement ray-tracing to depict a picture. Some techniques is used to deal with reflection, refraction, texture, depth of focus etc. <i>C++, OpenCV</i>
<i>Jan 2013</i>	Parallel Preprocess of A Recommendation System
	Parallelize the input module of a recommendation system to make it deal with millions of data efficiently and robustly. <i>Java, MapReduce</i>

Research-Oriented Projects

<i>Jun 2014</i>	Ensemble Learning Analysis
	Analyse the performance of different ensemble learning algorithms (Bagging, Adaboost.M1) on separating spam emails from usual ones. <i>Java, LibSVM, C4 Decision Tree</i>
<i>Jun 2014</i>	Dynamic Academic Hot Topic Discovery
<i>May 2014</i>	A web service which offers a convenient way to detect hot academic topics and their relevance over time. It uses machine learning algorithm to train data from last five years' papers in NIPS database. <i>Python with Machine Learning Package, Html, Javascript, Flask Framework, Cloud(BAE, Baidu Application Engine)</i>
<i>Mat 2014</i>	An Analysis of Decision Tree Classifier
	Analyse the performance of decision tree with pruning strategies on deciding a person's income range based on basic information. <i>Java</i>

Hardware Projects and Computer System

<i>Dec 2013</i>	A Simple FTP Protocol Implement for Linux A simple ftp server on linux supporting uploading and downloading files. <i>C++, Linux socket interface</i>
<i>Dec 2013</i> <i>Nov 2013</i>	A Computer System with a 16bits MIPS pipeline CPU Use VHDL to build a computer system, including 16-bit MIPS CPU, BIOS boot partition and VGA output. This computer system can be controlled by a terminal on a PC via serial port. <i>VHDL, ISE, 32K RAM, FPGA, LED</i>
<i>Jun 2013</i>	A Simple Rhythm Master Came Platform use a 8*16 LED matrix, CPLD with only 240 logic unit plus few independent digital circuits to build a simple platform on which we can play rhythm games. <i>VHDL, CPLD, LED, Gate Circuit</i>

More detailed information, demo and source code are on github and my homepage.

SOCIAL SERVICE

<i>Jul 2012</i>	‘Caring Girls in Gansu’ Summer Practice Captain of this detachment. Investigate living conditions of girls in two state-level poverty-stricken county in Gansu Province, western China. Second prize of the national competition.
<i>May 2014</i> <i>Jun 2012</i>	Youth League of the Department Member(2013) and director(2014) in the group of practice.

AWARDS

<i>Oct 2014</i>	Scholarship of Academic Excellence in Tsinghua University (2014)
<i>Oct 2013</i>	Scholarship of Academic Excellence in Tsinghua University (2013)
<i>Oct 2013</i>	Scholarship of Social Work in Tsinghua University (2013)
<i>Dec 2012</i>	First prize of Physics Competition for College Students in Beijing