Biao Jia

Curriculum Vitae

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"Action is eloquence."

Education

2010-2014 **Tsinghua University**, *Beijing*, B.Eng, specialized in Computer Science and Technology.

Relevant Training

Autumn 2013 Embedded System , Service Oriented Software Design and Development

Spring 2013 Pattern Recognition, Introduction to Machine Learning, Digital Image Processing, Artificial Neural Networks

Autumn 2012 Introduction to Database Management System

Spring 2012 Fundamentals of Computer Graphics

Autumn 2011 Media Computing, Introduction to Information Management

Relevant Skills

Basic Scheme, BASIC, x86/MIPS Assembly, OpenGL, Sqlite, Object C, Android, Processing, Django, PCB design

Intermediate Python, Pascal, Matlab ,LaTeX, Linux, Qt, VHDL, WEKA

Advanced Java, C++, OpenCV

Working Experience

Since Jul.2014 **Hohoyi Mobile Corp**, *Beijing*, Computer Vision Algorithm Engineer.
My work is designing algorithms to support the product. The Sight App is a application which helps our customers to save articles by capturing a screenshot and read later on iOS device. The backend screenshot analysis algorithm is all designed and wrote by myself, including:

- Client screenshot filter. aims to filter those screenshots without texts. The filtering on client should be efficient enough to process within 0.1 second.
- Layout analysis. This work is a framework of the backend image processing before we apply OCR to get text.
- Retrain the OCR model.
- URL extraction and Facebook preview recognition.
- Improvements on search strategy and image compression.

Research Experience

Spring.2014 **Pedestrian Segmentation after Detection**, *Diploma Project*, advised by Ai Haizhou.
Features
- Apply superpixel segmentation as an approach to preprocess the image as pre-segmentation.
- Propose a probabilistic model to compute the segmentation confidence map.
- Apply sparse coding method to the process of result refinement.

Experiments demonstrate that our method is much more efficient than the usual Graph-Cut based method.

Summer.2013 **Context based Binary Image Retrieval based on Visual Vocabulary**, *Hong Kong Polytechnic University*.
Features
- apply the algorithm to patent image retrieval.
- the recall rate is 5% higher than the best method(AHDH)

This work is going to submit to ICPR 2014.

Mar. 2013 **Handwriting Digits Recognition based on Neural Network and Restricted Boltzmann Machine**, *Artificial Neural Network*, advised by Prof. Zhu Xiaoyan.
Features
- back-probagation neural network
- restricted Boltzmann machine to pre-train the digits data
- directional line element as selected feature
- the precision rate is over 97%

Oct. 2012 **Viberation Frequency Computation of Elastic Object by Computer Vision Methods**, *Computer Vision*.

Practical work to support a research on electricity engineering. At first the task is to analyze a video of a vibrating composite insulator at a high rate with small amplitude, which can be hardly detected by human eyes. I found a method to extract the shape transformation of the insulator and compute the length and area of the shape, then the frequency can be easily compute by FFT(fast Fourier transform). Incidentally, all these work is finished in 2 hours.

Jun. 2012 **Digital Tone Tuner Design and Fabrication**, *Digital Logic Circuits*, cooperated with Ai Qingyao.

This is the final project for my Digital Logic Circuits course. We achieve
- listen and recognize a tune, then play it again.
- each part of the gadget was selected and purchased on our own
- compact printable circuit board design
- the core algorithm is implemented on a programmable logic device using VHDL.
- show the level of tune by an LED board, get the tune by a MIC and play it by a speaker

Miscellaneous Experience

May. 2012 **Cross Talk Show in campus**, *take part in the performance and organization*, The Student Art Group of Tsinghua University.

Oct. 2011 **Beijing Marathon**, *Half Marathon*, Beijing, finished in 2h09min.

Apr. 2011 **Assistance for teaching in west region of China to relieve the short of teachers**, *Weinan*, Shanxi Province, a week.

Awards

Sep. 2011 **Scholarship in Tsinghua University** , *3rd Place*.
Nov. 2008 **National Olympiad in Informatics in Provinces**, *1st Prize*.
Nov. 2007 **National Olympiad in Informatics in Provinces**, *1st Prize*.

Interests

- Psychology
- Tennis
- Painting

- Biology
- Fencing
- Poetry