MINKE CHENG

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EDUCATION

Tsinghua University, Beijing, China Aug. 2013-Jul. 2017

B.E. in Electrical Engineering

University of Texas at Austin, United States of America Aug. 2017-Present

M.S. in Electrical and Computer Engineering, Software Engineering and Systems track

RESEARCH EXPERIENCES

Medical Image Registration Project | Remote | Participant Nov. 2015-Dec. 2015

- In this project, I explored methods on registration of medical images from different pieces of equipment.
- Method One: I realized image registration by choosing several pairs of points according to different models and applying them to affine transformation. This method succeeded in realizing the goal.
- Method Two: I realized image registration by calculating mutual information from two images and looking for the exact positions when the value reached a peak. This method could work automatically and gain higher accuracy.

WORKING EXPERIENCES

IFLYTEK Company Limited | Research Lab | Intern | Beijing Jun. 2016-Aug. 2016

Assisted in a natural language processing project of building up a medical ontology database.

- Wrote a web crawler to extract jargons and used regular expression to extracted needed expressions.
- Implemented word embedding techniques to train word vectors, based on which to find synonyms and related words and differentiate them by analyzing their distribution.
- Used LTP tool to test Chinese texts segmentation and explored a new method based on Topwords. The former performed better in segmenting regular words while the latter performed better in segmenting technical words.

TANKER Company Limited | Intern | Beijing Sept. 2016-Dec. 2016

Assisted in eliminating false positives of a railway security system.

- Collected data from an existing WI-FI system that is used to monitor intruders.
- Extracted different features of those data of warnings, such as Principal Component Analysis (PCA), Local Binary Pattern (LBP), Dynamic Time Warping (DTW) and Local Outlier Factor (LOF).
- Used image features and LOF to reduce false positives by over 90% with an optimized SVM classification.

COURSE PROJECT

Web and Mobile App Development

- Used NodeJS with Express Framework to build a website for users finding keepers to take care of their pets. Used ReactJS to design and develop its mobile version.
- Used Jinja with Google AppEngine to build a photo stream management website. Used Java with Android Studio to build its mobile version.

Human Robert Interaction

- Designed motions, conducted experiments and implemented Genetic Algorithm to help Sphero learn to express a fixed set of emotions.

Computer Graphics

- Till now, the course projects include ray tracing, acceleration with kd tree, menger sponge and Tessellation.

SKILLS

Programming Languages: C/C++, Python, Matlab, SQL, Verilog, HTML, CSS, ReactJS, Java