JUNJIE PAN

Machine Learning and Software Engineering

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Languages

English (professional)
Chinese (native)

Programming

Python, C
Matlab
Bash
VHDL, Verilog
Latex

Professional Skills

Machine Learning
Speech Recognition
Machine Translation
Dialogue System
DNN, HMM, GMM
Data Mining
Signal Processing
NLP, HTK
Linux/Unix, Github
FPGA, Arduino, Robotics

Certification

CCNA
IELTS(7.5)

Summary

I am interested in machine learning, speech, natural language processing, and hardware programming. I have been studying in UK from 2013 till now, and have experience in machine learning and speech area for one year, in electronics and hardware programming for four years. I always act as leader in group work, and can efficiently co-operate with different people.

Education

Since 2015 **University of Cambridge** Cambridge, United Kingdom
Master's Degree, Machine Learning, speech and Language Technology
Will graduate in the mid of August

2013–2015 **University of Birmingham** Birmingham, United Kingdom
Bachelor's Degree, Electronic, Electrical and System Engineering
Graduated with Honours, Class I

2011–2013 **Huazhong University of Science and Technology** Wuhan, China
Bachelor's Degree, Information Engineering
Participated in 2+2 program to University of Birmingham in 2013

Academic Experience

04/2016-(on-going) **Automated Language Teaching and Assessment (ALTA)** Cambridge

Description:

ALTA institute is founded by Cambridge English Language Assessment to conduct research in automated assessment of textual and spoken materials.

My research in ALTA is to improve the adaptation performance of ASR systems for non-native speakers with different first languages using unsupervised/semi-supervised learning

10/2015-04/2016 **Kaggle Competition** Cambridge

There were 3 tasks: Regression, Classification and Density Modelling. I was responsible for the first two.

My Work: Supervisor: Prof. Rich Turner

- Regression: Final Rank: 7th
  - Implement different missing data imputation methods.
  - Build Gaussian process, Bayesian ridge regression, nearest neighbour, decision trees, kernel ridge, and support vector regression models and evaluate their performance.
  - Construct regression model with the best configuration.
- Classification: Final Rank: 5th
  - Apply PCA to given dataset.
  - Train k-nearest neighbours, neural networks, Gaussian process and support vector machines, and investigate their performance.
  - [-] Construct classification model with the best configuration.

10/2015-
04/2016

Large Vocabulary Speech Recognition Cambridge

This project aims to investigate three parts of state-of-art large vocabulary speech recognition: language modelling, acoustic model speaker adaptation and system combination.

My Work: Supervisor: Prof. Mark Gales

- Use EM algorithm to estimate language model(LM) interpolation weights and combine five provided LMs.
- Use HTK(version 3.5) to implement acoustic model cross-adaptation among plp, grph-plp, tandem, grph-tandem and hybrid systems.
- Achieve ROVER combination and Confusion Network Combination using dynamic programming.
- Analyse results and build the final version of evaluation system for testing dataset.

11/2014-
03/2015

Interactive Clothing - Smart Hoodies Birmingham

This project aims to design an smart hoodie that can monitor user's daily exercise, give suggestions and be controlled by smart phones

My Work: Supervisor: Prof. Chris Baber

- Hardware design: layout of electronics, arrangement of wiring, and power supply system with consideration of comfort, safety and reliability.
- Algorithm design: real-time monitoring, dynamic thresholds, negative feedback and reinforcement learning.
- Controlling APP design: an APP on Android system to control the smart hoodie via Bluetooth.

11/2013-
05/2014

Auto-Tracking Robot Competition Birmingham

This project aims to develop an auto-tracking three-wheel robot with high speed and stability

My Work: Supervisor: Mr. Phil Atkins

- Allocate work to each group members and design the timetable
- Robot design: robot structure and sensors layout
- Hardware programming: high-accuracy tracking with negative feedback controlling

Working Experience

07/2015-
09/2015

Anhui Branches of China Mobile Group Design Institute Anhui, China

Position: Network Designer(Internship)

Resposibility: Taking part in the program of designing the Stage-3 4G wireless network in Anhui province in China. Learning the relevant practical knowledge about large-scale network configuration, construction of base station. Also, participating the work in field test, data analysis and network optimization.

Referee

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Chair of Pervasive and Ubiquitous Computing
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