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# Yichen (Eason) PAN

## Education

2013 – 2017 **The University of Nottingham Ningbo, China**.
BSc Hons Computer Science

Average mark 85 (British education system, 1%, 1/46, GPA: 4.0)

Thesis *Feature Extraction via Random Recurrent Deep Ensembles and its Application in Group-level Happiness Estimation*

## Honors and Awards

03/2017 **Zhejiang Provincial Outstanding Graduates**, *Education Department of Zhejiang*.
For overall achievements at university, 4%

12/2016 **Best Student of the Year Scholarship**, *The University of Nottingham*.
For the best student in each department

12/2016 **President's Scholarship**, *The University of Nottingham*.
For excellent academic performance, 30000RMB, 1%

11/2016 **China National Scholarship**, *Ministry of Education of The People's Republic of China*.
Highest scholarship in China; top 1% of all university students

11/2016 **The 2016 ACM-ICPC Asia Regional Contest Bronze Award**.

11/2016 **Dream Scholarship**, *The University of Nottingham*.
For innovative science and technology achievements, 1%

08/2016 **Best Project in Seals Competition**, *Alibaba Group*.
For the best project out of 12 projects

05/2016 **Best Group Project and Group Leader**, *The University of Nottingham Ningbo China*.
For the best year 3 group project in School of Computer Science and the best group leader

03/2016 **UI Design Competition**, *The University of Nottingham Ningbo China*.
Second award, 1%, Demo link

03/2016 **Outstanding Student**, *The University of Nottingham Ningbo China*.
For innovative and excellent academic contribution, 1%

12/2015 **Provost's Scholarship**, *The University of Nottingham*.
For excellent academic performance, 15000RMB, 1.5%

12/2015 **2015 Ningbo Collegiate Programming Contest**, *The Education Committee of Ningbo*.
Third award

05/2015 **Outstanding Director of Organization**, *The University of Nottingham Ningbo China*.
For outstanding leadership in social activities, 1%

12/2014 **Dean's Scholarship**, *The University of Nottingham*.
For good academic performance, 6000RMB, 10%

## Publications

Towey D., **Pan Y.**, Qu Y.. *Students as Partners in a Multi-media Note-taking App Development: Best Practices*. Poster session presented at: International Conference on Software Engineering (ICSE), 2017. (accepted)

Fu X., **Pan Y.**, Ch'ng, E., Aickelin, Uwe.. *Learning to detect redundancies with word mover's distance based on distributed representations.* (under review)

## Internship

05/2016 – 09/2016 **Taobao Team**, Alibaba Group, Algorithm Engineer.

- Automatic mobile-based speaker verification system development.
  - Implemented and compared several state-of-art approaches and models, such as GMM-UBM, I-vector and JFA to realize speaker verification tasks in practice.
  - Optimized and came up with original algorithms to improve the performance, including variant weighting scheme in models.
  - Set up a deep learning based speaker verification system.
- Security Robot design and development under the funding from GNome Magic Lab.
  - Set up a face detection and verification system.
  - Applied for the National Utility Model Patent.

05/2015 – 09/2015 **Big Data and Visual Analytics Lab Internship**, The University of Nottingham Ningbo China, Research assistant.

- Configured and practiced a big data architecture (Hadoop and MPI) for social media data mining and novelty event detection.
- Collected health-related data from social media websites (Twitter, Weibo).
- Conducted data pre-processing and cleaning work.
- Conducted data analysis, including keywords, sentiments, numerical analysis using machine learning technology.

## Skills

Basic Image Processing, HCI, Data Visualization, Python, Weka

Intermediate Web technique, MEAN stack, Machine Learning, Natural Language Processing, Computer Vision, Data Mining, R, Matlab, Database Management, C/C++, Java, Design Pattern, Software Engineering, Agile Development

## Research

09/2016 – Present **Feature Extraction via Random Recurrent Deep Ensembles and its Application in Group-level Happiness Estimation**, *https://grep.panatopos.com*.

- Undergraduate thesis
- Presented a novel ensemble framework (RRDE) to extract highly discriminative feature representation of image and apply it for group-level happiness intensity prediction in wild.
- Best result yielded a 0.55 root-mean-square error (RMSE) on validation set of HAPPEI dataset, significantly better than the baseline of 0.78.

09/2015 – Present **Redundancy Detection Based on Word Embeddings**, *Undergraduate researcher*.

- Based on the statistics language model, applied LSI and incremental TF-IDF to realize real-time FSD.
- Optimized FSD by applying SVD to solve polysemy and synonymy problems and reduce noise.
- Proposed a novel redundant event filtering system based on the dense word embedding scheme (word2vec) incorporated with the distributed word mover's distance metric.
  - Optimized the process of calculating EMD.
  - Applied EMD in clustering (including K-means, hierarchical clustering and etc.) to realize highly accurate FSD.
- Submitted for a research paper.

05/2015 – 09/2015 **Twitter Sentiment Analysis**, Big Data and Visual Analytics Lab.

- Compared the difference in feature selection methods (Information gain, CHI and Document frequency).
- Optimized the lexicon based sentiment analysis:
  - Optimized the algorithm by considering intensifying words, negation words, position and punctuations.
- Compared and optimized the supervised approach using machine learning classification algorithms.
  - Compared the difference in feature weight algorithms (Presence, TF and TF-IDF).
  - Compared the difference in classification by using different supervised algorithms (including Multinomial Naive Bayes, KNN, C4.5, SVM and etc.) under different feature selection methods and feature weight algorithms.
- Classified sentiment using lexicon-based ensemble learning methods.
  - Generated features based on various lexicons.
  - Enhanced classification by using ensemble classifiers (including Boosting, Bagging and etc.).
- Proposed a multinomial NaìĹve Bayes classifier with several emoji-related features, which outperforms the top system in the task of Sentiment Analysis in Twitter in SemEval-2013 in terms of averaged F scores.

02/2016 – 05/2016 **Data mining and visual analytics**.

- Data visualization using Gephi to explore small-world network.

## Open-source Projects

01/2016 – Present **QuickNote (a scientific note-taking app)**, *team leader, scrum master, full-stack developer*, http://quicknote.org.

- Application description:
  - Based on MEAN stack and node-webkit technique.
  - Monitored and recorded users' activity data for data analysis and mining to find a scientific way of taking notes.
  - Based on machine learning and NLP algorithms to classify notes to build a university ranged but major or topic specific knowledge database.
  - Built a user-friendly notes and knowledge sharing environment to facilitate and manage innovation and organisational learning.
  - Supported a number of distinct features including powerful multimedia, drag and drop, cloud storage and sharing mechanism.
- Embraced and promoted the spirit of open-source.
- Efficiently led the development team to complete a full cycle of the software engineering process.
- Recognized at the provincial level as a Zhejiang Provincial Higher Education T&L Development Scheme Project.
- Received a UNNC Teaching and Learning grant two years in a row in recognition of its importance in the development of pedagogy at UNNC.

05/2016 – Present **Yigong She (a voluntary worker platform)**, *team leader, full-stack developer*.

- Product description:
  - Based on LAMP stack technique
  - Offered two systems, one is for voluntary workers to register and arrange work and the other is for managers to manage the whole team.
- Promoted charity to students in the university.

## Portfolio

**QucikNote**, *http://quicknote.org*.

- Open-sourced project, under license CC BY-SA.

**Super Delivery (UI design)**, *http://panatopos.com/SuperDelivery*.

- Won the second award in the university UI competition and highest mark in the HCI module.

**AngryBirds & Plants VS Zombies**, *https://github.com/PAN001/AngryBirds-PlantsVSZombies*.

- A desktop game based on Cpp programming.

**Interactive games developed with Python**, *https://github.com/PAN001/Interactive-Game-using-Python*.

- Integrated the learning process into designing Python-based games.

## Scores

GRE 326 (Verbal: 159, Quantitative: 167)

TOEFL 105 (Reading: 29, Listening: 26, Speaking: 23, Writing: 27)

## Selected Courses at university

AE1DBS **Database Systems**, first class.
- In-depth knowledge of the relational models of database systems.
- Able to effectively use MySQL and MongoDB for practical usage.

AE1WPS **Web Programming and Scripting**, first class.
- In-depth knowledge of the network protocols, layers and models.
- Adept at designing static and dynamic websites and complete web applications using MEAN stack.
- Skilled in using scripts to conduct web crawler and information retrieval.

AE2ADS **Algorithms and Data Structures**, first class.
- In-depth knowledge of common data structures and algorithms.
- Adept at applying knowledge into practical usage.

AE2SAD **Software Application Development**, first class.
- In-depth knowledge of modern interface paradigms and design patterns.
- Adept at designing and writing object-oriented programs and GUIs.

AE2SEM **Software Engineering Methodologies**, first class.
- In-depth knowledge of modern software development strategy, change and conflict management.
- Skilled in agile development and productive teamwork.
- Skilled in software testing and quality assurance.

## Selected Completed online Courses

Johns Hopkins **Exploratory Data Analysis** *Verified certification URL*

Duke **Data Analysis and Statistical Inference** *Verified certification URL*

Stanford **Mining Massive Datasets** *Certification URL*

Stanford **Cryptography** *Certification URL*

## Presentation

09/2016 **UNNC Teaching & Learning Conference**, *speaker*, The University of Nottingham Ningbo China.
- Give a presentation on introduction to QuickNote and how it will be integrated into daily teaching and learning at the university.

## Organization

05/2014 – 05/2015 **Student Society Center (SSC)**, *The director of the secretariat department*, The University of Nottingham Ningbo China.
- Organized and managed the secretariat department.
- Handled the public relations among the organization.
- Regulated and supervised more than 80 societies and organizations at campus.
- Organized and directed several university level activities, including UNNC Open Day, Sports Festival, Art Month and etc.
- Took charge of editing and designing UNNC society books.
- Highly developed the capability of the operation and coordination.

09/2014 – Present **Learning Community Fora (LCF)**, *LCF for Computer Science*, The University of Nottingham.
- Liaised with all students and represented as students to raise their issues and requests to the academic faculty.
- Supported the improvement of academic teaching and learning.
- Obtained the ability of communication and negotiation.
- Highly developed the sense of responsibility and integrity.