

MS. JIANBEN HE

School of Electronic Information and Communications
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EDUCATION

Huazhong University of Science and Technology (HUST) Wuhan, China
Bachelor of Engineering in Electronics and Information Engineering Sept 2015 – June 2019

- Overall GPA: 89.4/100; Junior Year GPA: 92.34/100(Rank 1/30); Sophomore Year GPA: 91.23/100 (Rank 1/30)
- Selected to *the Outstanding Engineer Class* (top 2%, on basis of outstanding academic performance)
- Main Courses and Scores: Analog Circuit and Digital System I & II & III (100/93/96), Communication Electronic Circuits (100), Principle of Communication (97), Probability and Statistic (99), Mathematical Equations (97), Stochastic Signal Analysis (93), Computer Networks (92)
- Graduated with President's List Honor in the year of 2019

RESEARCH EXPERIENCE

Intern, Tsinghua University (Institute for Network Science and Cyberspace) Beijing, China
Jul 2018 – Sep 2018

- Assisted research projects for Dr. Chao Zhang
- **Core Project: Data Tracing Based on AI (Artificial Intelligence) Algorithm**
- Participated in the project which applied machine learning algorithms to finish malware data classification and clustering
- Implemented several machine learning algorithms, i.e. light GBM, LSTM-based Hierarchical Denoising Network for Android Malware Detection, and compared their recognition results
- Preprocessed the malware data, trained the model with 270000 data, and tested it with 90000 data
- Achieved the accuracy of 99.4%

Intern, Tsinghua University (Department of Microelectronics and Nanoelectronics) Beijing, China
Jul 2017 – Sep 2017

- Assisted research projects for Dr. Liji Wu
- **Core Project: A Novel Hardware Trojan Detection with Chip ID Based on Relative Time Delay**
- Studied papers and materials related to Hardware Trojan in integrated circuit, accomplished the work of coding and simulation of the TDC module
- Wrote part of the paper and published it to IEEE ASID 2017 conferenc

PUBLICATION

- Yang, Yijun, Liji Wu, Xiangmin Zhang, and **Jianben He**. "A novel hardware trojan detection with chip ID based on relative time delays." In *Anti-counterfeiting, Security, and Identification (ASID)*, 2017 11th IEEE International Conference on, pp. 163-167. IEEE ASID, 2017

EXTRACURRICULAR ACTIVITIES

Stanford University Stanford, C.A., US
Winter Visiting Program Jan 2017

- Took courses and attended lectures about innovation leadership, AI and entrepreneurship
- Finish the project of designing a novel technology product
- Won the first prize in the final presentation evaluated by professors

University of Hong Kong Hong Kong, China
Summer Credit Course, School of Mathematics Jun 2016

- Course: Mathematical Laboratory and Modelling (Grade:4.3/4.3)
- Received the Excellent Student Scholarship

Team 3C (a team of English elites in HUST) Wuhan, China
Qiming College Oct 2016 – Jun 2017

- Organized trainings for public speaking and salon for team members to share their experience and visions
- Assisted the 9th TEDxHUST, to spread the inspiring ideas among the whole university
- Participated in the Central China Model United Nations Conference

SELECTED AWARDS AND HONORS

- Outstanding Graduate of HUST in the year of 2019 Jun 2019
- Outstanding Undergraduate in Terms of Academic Performance (Top 1%) Jan 2018
- 2018 National Scholarship (Top 2%) Oct 2018
- 2017 University-level Merit Student Honor (Top 2%) Oct 2018
- Excellent Student Scholarship of GOODIX Company (selected only 2 undergraduates within 3 departments) Feb 2018
- Excellent Student Scholarship of Huaxing Guangdian Incorporation (selected only 10 undergraduates within the whole university) Jan 2018
- 2017 National Scholarship (Top 2%) Oct 2017
- 2017 University-level Merit Student Honor (Top 2%) Oct 2017
- Public Service Scholarship (Top 5%) Sept 2016
- New Student Scholarship (Top 5%) Mar 2016

SELECTED PROJECT EXPERIENCE

- Undergraduate Design, Drone Identification System Design** Mar 2019 – Jun 2019
- Designed a complete system to identify the existence of drone through the micro-Doppler effects generated by the motion during the flight based on mmwave-signal processing and deep learning model classification
 - Set up the TI IWR1443 mmwave-sensor experiment platform and collected data in the field
 - Analyzed the collected data in time-frequency domain using Short-Time Fourier Transform to extract micro-Doppler signatures
 - Built a Convolutional Neural Network to do the classification of the input spectrograms and it achieves 99% identification accuracy
- Project Participant, Consumption Behavior Analysis and Prediction** Mar 2018 – May 2018
- Designed a classification model to predict user's consumption behavior based on the existing user and commodity data
 - Extracted features like purchase frequency and salability from data
 - Employed the collaborative filtering recommendation algorithms to get the to be recommended commodity
 - Implemented classification models like SVM and XGBoost to predict whether the user will purchase the goods
- Project Participant, Person Re-identification System Based on CNN** Sept 2017 – Jan 2018
- Developed a system which can detect the same person in different videos
 - Preprocessed the 8000 image data in CUHK dataset, extracted features by using CNN, trained the CNN model based on 7000 image data, and tested it based on 100 image data
 - Designed the GUI interface
- Project Participant, Instance Messaging System Design** Oct 2017 – Dec 2017
- Design an efficient communication policy with multithreading
 - Support peer-to-peer and group communication with a central server
 - All messages or requests are packaged into a json string for easily encoding and decoding
- Project Principal, Smart Car Design** Apr 2017 – Jun 2017
- Led a three-person team to design a smart car which can travel along the black line, detect and avoid obstacles, and count the number of them
 - Took charge of the hardware system design and several module design including overall framework, tracing, function choosing, and speed monitoring
 - Completed a summary report and gave a final presentation

SKILLS

Software: PyCharm, Anaconda, Matlab, Xilinx ISE

Framework: Tensorflow, Keras

Programming Language: C, Java, Python, Verilog

Certificate: Programmer, National Qualification Certificate of Computer and Software Technology Proficiency

English Language Proficiency:

- GRE: 328+3.5 (Verbal:161+Quantative:167 AW:3.5)
- TOFEL: 107 (Reading:29+Listening:29+Speaking:22+Writing:27)