Haocheng Han

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Education

Shanghai Jiao Tong University   **Shanghai, China**
B.E. in Information Security   *September 2016 – June 2020(expected)*

- Overall GPA: 86.5/100, 3.6/4.0   Junior GPA: 88/100, 3.8/4.0 (Junior Ranking : 13/102)
- **Core Courses(Selected):** Thinking and Approach of Programming (93), Linear Algebra (91), Probability and Statistics (94), Mathematical Fundamentals of Information Security (92), Computer Organization and Architecture (96), Principles of Database (90), Compiler Principles (95), Computer Communication and Network (90), Mobile Communications (93)

Internship

Microsoft   **Suzhou, China**
Software Engineer Intern (SWE Intern)   *June 2019- October 2019*

- Worked at Microsoft Bot Framework Team of Software Technology Center Asia (STCA), contributing to a comprehensive framework for building enterprise-grade conversational AI experiences
- Built a conversational AI based on Bot Framework dealing with Emails, which contains rules and conversation flow for functions of checking, sending, replying and forwarding users' emails at their willing
- Developed a CLI tool LGgen as a part of Bot Framework Builder, which can analyse language generation(LG) template with Antlr4 and generate class files from a LG file or folder, then help user input template name automatically with VS IntelliSense, supporting C# and Typescript
- Conducted a tech survey on grammar checker, researched on and compared Link Grammar of CMU and SyntaxNet of Google to give advice on the implementation of similar function in LG module

Research Experiences

Building Semantic Network for Public Opinion of Social Media   **Mar. 2019 - Present**
Research Assistant   *Information Content Analysis Lab*
Advisor: Jianhua Li, professor and dean of Network Security Technology Research Institute, SJTU

- Built a semantic network for public opinion, focusing on politics and social topics
- Collected millions of tweets in Twitter and analyzed them with Named Entity Recognition about the dependencies within the sentence
- Mapped tweets into the network to find social opinion trend within Twitter

Football Analysing System and Visualization from Multi-view Videos   **Mar. 2017 - Nov. 2017**
Research Assistant   *SJTU Visual Media Lab*
Advisor: Bin Sheng, associate professor at Department of Computer Science and Engineering, SJTU

- Built a football player tracking system, which analyze real-time positions of football players from 4 cameras' recordings at the corners of the field during the match and converting into 2D frames
- Refined the algorithm to pick up the football field, players' team and field boundary, utilized openCV image processing tools like cvErode, medianBlur, cvDilate and Top-Hat, etc. to deal with object detection, and a 6.5% increment in accuracy was achieved

- Built a 2D model to show the positions of players and statistics, then construct a GUI to show the frames for coaches

Academic Project

Toxic Comment Classification Challenge   **Aug. 2019 - Present**
Team Leader

- Built a multi-header model detecting toxic comments like threats, obscenity, and insults, which allows users to select which types of toxicity they're interested in finding
- Proposed a RNN-CNN model consist of Bi-GRU and Bi-LSTM
- Joined the Kaggle competition and earned a score of XXX in XXX, improving the accuracy from XXX to XXX and a ranking of XXX in XXX teams

Embedded Deep Learning Developing: Auto People Tracking Vehicle   **Sept. 2018 - Dec. 2018**
Team Leader

- Implemented the human detection model on Nvidia Jetson TX2 Developer Kit, an embedded AI computing device and a portable vehicle, designed vehicle movement response according to detected position, to make the vehicle track people's movement automatically
- Trained the human detection model with 1000+ human pictures and labels from PASCAL VOC 2007, based on the state-of-the-art deep learning frames darkflow YOLOv2 to achieve real-time object detection
- Developed a web page to display real-time video remotely from the camera with flask, at a frame rate of about 7 FPS
- Achieved the highest accuracy and the best score in the SJTU Student Innovation Center's final presentation

Network Sniffer   **Sept. 2018 - Jan. 2019**
Independent Developer

- Developed a sniffer tool, which can capture and analyze network packets from Internet with winpcap, then interpreted them of different protocols (ARP, ICMP, IPV4/IPV6, TCP, UDP) in different layers and get information like IP address, time and content, using user-friendly GUI with Qt5
- Implemented other features including packets searching and filtering according to IP addresses, MAC addresses and protocols, IP packets reassembling, TCP stream tracking, packets saving as pcap files and network speed monitoring
- Got full marks in the curriculum design of Computer Communication and Network

Honors and Awards

- Shanghai Jiao Tong University Academic Excellence Scholarship   2017
- Shanghai Jiao Tong University Merit Student   2018
- Shanghai Jiao Tong University Secondary Academic Excellence Scholarship (Top 10%)   2019

Skills

- Programming Languages: C++, Python, MATLAB, Assembly, C#, Verilog
- Others: Latex, Linux, Git