

# 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: 86.3/100, 3.6/4.0 Junior GPA: 88/100, 3.8/4.0
- Ranking: 13/102 (Junior Year)
- 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)

#### 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

## 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), building a comprehensive framework for building enterprise-grade conversational AI experiences.
- Built a conversational AI based on Bot Framework dealing with Emails called Email Bot, consisting functions of checking, sending, replying and forwarding emails at user's willing.
- Developed a command line interface tool LGgen, analyzing LG template with Antlr4 and generating class files from a LG file or folder, working with VS IntelliSense to help input template name automatically, supporting C# and Typescript.
- Did research on grammar checker, diving into traditional scheme Link Grammar of CMU and comparing with scheme adopted.

## 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, Shanghai Jiao Tong University
- Built a semantic network for public opinion, focusing on politics and social topics.
- Collected millions of tweets in twitter and mapped them into the network to find social opinion trends 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, Shanghai Jiao Tong University

- Built a football player tracking system, analyzing real-time position of football players from 4 cameras' recordings at the corner of the fields during the match and converting into 2D frames.
- Refined an algorithm to pick up the football field, players' team and field boundary, using openCV image processing methods like cvErode, medianBlur, cvDilate and Top-Hat, etc. to deal with object detection. The new algorithm achieved a 6.5% increment in accuracy.
- Built a 2D model to show the positions of players and statistics and a GUI for coaches to show the frames.

## Academic Project

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### Kaggle Competition: Toxic Comment Classification Challenge

Aug. 2019 - Present

Team Leader

- Built a multi-header model detecting toxic comments like threats, obscenity, insults, and identity-based hate, allowing users to select which types of toxicity they're interested in finding, using models like XXX and XXX.
- 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

SJTU Student Innovation Center

- Led a team training the human detection with 1000+ human pictures and labels from PASCAL VOC 2007, using state-of-the-art deep learning frameworks darkflow YOLOv2 to achieve real-time object detection.
- Implemented the frame on an Nvidia Jetson TX2 Developer Kit, an embedded AI computing device and a portable vehicle. and designed vehicle movement response according to the detection result's position, to make the vehicle auto-track people's movement.
- Real-time images are remotely displaying on the terminal using flask server with multiple threading. The video's frame rate is up to about 7 FPS.
- Won the best accuracy rate and highest score in the 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 interpret them of different protocols (ARP, ICMP, IGMP, IPV4, IPV6, TCP, UDP) in different layers and get information like IP address time and content, using user-friendly GUI with Qt5 and multiple threadings.
- Other features includes packets searching and filtering according to IP addresses, MAC addresses and protocols, IP packets reassembling, TCP stream tracking, packets saving as pcap file and network speed monitoring.
- Curriculum design of Computer Communication and Network and got full marks.

## Skills

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