Guoheng **Sun**

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Education

Sichuan University *Sichuan, China*

Bachelor of Cybersecurity, School of Cyber Science and Engineering *9 / 2020 - 6 / 2024*

- GPA : 3.9 / 4.0 (92 / 100)
- Rank : 2 / 189

Awards

2022	**National Scholarship**, Ministry of Education (the highest honor scholarship in China)
2022	**1st Prize**, University Annual Scholarship
2021&2022	**Outstanding Student**, Sichuan University
2022	**National 1st Prize**, China International College Students "Internet+" Internet innovation and Entrepreneurship Competition
2022	**National 3rd Prize**, "China Software Cup" College Student Software Design Competition

Project Experience

Research on the Defense Mechanism of Large Character Set CAPTCHA based on Adversarial Examples *Advisor: Prof. Haizhou Wang*

National-level Student Innovation and Entrepreneurship Project *8 / 2021 – 2 / 2023*

- Python, PyTorch, Faster-Rcnn, YOLO, SSD, etc.
- Proposed a general adversarial example generation framework for generating transferable and robust adversarial examples against detection and recognition models.
- Compared with existing adversarial example generation methods, our approach implemented SOTA on multiple CAPTCHA datasets.
- I participated in the design of the experiments and the writing of the paper. I completed most of the experiments.

Prediction and Analysis of Clinical Data with Machine Learning *Advisor: Prof. Mao Chen & Dr. Qi Liu*

Provincial-level Student Innovation and Entrepreneurship Project *10 / 2021 – 4 / 2022*

- Python, Sklearn, PyTorch, etc.
- Explored the application of machine learning techniques in the healthcare field, especially survival analysis.
- Collected clinical data, completed the data pre-processing, feature selection and used structured data to build and evaluate models.

SylixOS-based Face Recognition Classroom Sign-in System *Advisor: Prof. zhiyang Fang*

Competition Project *6 / 2022 – 8 / 2022*

- C++, Python, SylixOS, NCNN, OpenCV, etc.
- Implemented face detection, live detection and face recognition on the NCNN framework.
- Completed the training, pruning and transformation and integration of the models.
- Deployed our system to the embedded operating system, and achieved *10 frames per second* in embedded systems through multi-threading.

Virtual Simulation: Emergency Treatment of Food Poisoning Incidents *Advisor: Prof. Xiaoli Zou*

Competition Project *8 / 2021 – 11 / 2021*

- C#, Unity, Blender, etc.
- Implemented a virtual simulation project based on Unity engine. Containd modules for UI, dialogue, operation, test, scoring, etc.
- Implemented the UI module based on *Stack*, the dialogue module using *Coroutines*, and the mouse interaction module using *Ray*.

Publication

Fighting Attacks on Large Character Set CAPTCHAs Using Transferable Adversarial Examples. In submission to IJCNN-2023, 2-nd author.

Skills

Languages Python, C#, C++, C, JAVA, HTML, JavaScript, CSS, etc.

Tool Kits Git, Bash, Docker, MySQL, etc.

Others PyTorch, TensorFlow, LaTeX, Unity, Sklearn, Linux, Burpsuite, Blender, etc.