

SIYUAN SHI

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EDUCATION

New York University, Brooklyn, NY Program: Master's in Computer Engineering, Current GPA: 3.85/4.00	Sept 2019 – May 2021
Nanjing University of Aeronautics and Astronautics, Nanjing, Jiangsu, China Bachelor of Science, Information Engineering, GPA: 3.5/5.00	Sept 2015 – Jun 2019
University of Wisconsin-Madison, Madison, WI Exchange Program, GPA: 3.75/4.00	Sept 2017 – Dec 2017

SKILLS

- Programming Language: C/C++, Python, HTML, MySQL, JavaScript
- Software and Framework: PyTorch, Keras, TensorFlow, Django, MATLAB, Node.js, Linux, Ryu, Hadoop

WORKING EXPERIENCE

NYU Multimedia and Visual Computing Lab, Brooklyn, New York Research Assistant	June 2020 - July 2020
<ul style="list-style-type: none">• Designed a model for hyperspectral remote sensing which classifies every pixel of satellite image into a certain land-cover type including crop, buildings, and natural perennial vegetation.• Extracted features in hyperspectral image more efficiently by implementing spectral and spatial attention on the model and passing the concatenated spectral-spatial features into a softmax classifier to get final results.• Achieved 95% accuracy with 10% samples used for training on Indian Pines, Pavia University and other two datasets.• Designed a Few-Shot Object Detection model which requires fewer training data to achieve satisfied result on object detection which is helpful in scenarios such as medical images where sufficient training data is hard to get.• Obtained more accurate feature from support images by applying attention-RPN and Cross-Reference on the model. Passed the feature to ROI-Pooling, bounding box regressor and category classifier to get average precision.• Evaluated the model on MS COCO dataset and achieved 65.0% on AP₅₀ and 42.9% on AP₇₅.	

ACADEMIC PROJECTS

CSAW HackML 2020 Backdoor detection, Brooklyn, New York	Oct 2020 - Dec 2020
<ul style="list-style-type: none">• Designed a model to detect and repair backdoors in deep learning model using Keras framework, which is useful in applications such as self-driving cars or face verification system where security is key indicator.• Implemented backdoor detection using STRong Intentional Perturbation (STRIP) based on the idea that triggers have strong effect to force a fixed wrong prediction.• Repaired the models using fine-pruning, the principle of which is removing neurons that are dormant for clean inputs so that these neurons will not be activated by backdoor triggers.• Achieved 93% true negative rate and 97% true positive rate on backdoor detection and 99% accuracy on repaired model.	
Embedded Challenge Term Project “Embedded Sentry”, Brooklyn, New York	Apr 2020 - June 2020
<ul style="list-style-type: none">• Used microcontroller and Inertial Measurement Unit to design a system in C++ that can record and recognize hands movements, which could be further used in smart locks system as extra verification method.• Sampled sequence of data including acceleration and angular motion using accelerometer and transferred data to the microcontroller via Inter-Integrated Circuit (I2C) Protocol.• Used Kalman filter to smooth the time sequence and Dynamic Time Warping (DTW) algorithm to match patterns, achieving about 70% accuracy on complicate movements detection.	
Database System Design and Web-based User Interface, Brooklyn, New York	Mar 2020 - May 2020
<ul style="list-style-type: none">• Designed for an insurance company a database system which consists of home insurance and auto insurance and web-based user interface where users can register, login, purchase and query insurances.• Created logical model and relational model using Oracle datamodeler. Implemented the database system using MySQL.• Designed a web-based user interface with features including user login system, insurance query system and admin authorization system using Django framework, coded in Python, HTML and CSS.• Improved security by using csrf token to prevent Cross-Site Request Forgery and adding more constraints such as date constraint using jQuery.	