XIAXIN SHEN

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EDUCATION

- **B.S. Computer Information Technology, Purdue University** *May 2022*
  GPA: 3.98 / 4.0 *West Lafayette, IN 47906*

SKILLS

- **Python:** Implemented data scraping, XML files parsing, data cleaning, data analytics and model building with TensorFlow and PyTorch
- **C/C++:** Implemented data structure and algorithms by finishing about 150 problems at online judge system
- **Java:** Maintained a Java-based system using the technique of Mybatis, Maven, Spring MVC for knowledge mapping. Implemented parallel programming for operating system.
- **Dynamic website development:** Implemented an e-commerce site with HTML, CSS, JavaScript, JQuery, PHP, MySQL
- **Latex:** Edited paper with IEEE/ ACM/ Springer formats
- **Git:** Version control especially for group projects
- **Hadoop & Spark:** Set up a distributed, multi-node Apache Hadoop cluster backed by the Hadoop Distributed File System (HDFS), running on Ubuntu Linux. Ran MapReduce jobs with Hadoop. Deployed Spark and ran NLP tasks with Spark
- **Tableau:** Visualized and analyzed data for illicit drugs in US in Purdue's 7th Annual ASA DataFest Competition
- **AR:** Visualized the digital twin using augmented reality based on Web for showing network information and GPS location with mobile phones when scanning images
- **Unix/Linux Environments:** Used Ubuntu and Kali linux to do about 20 labs related to software, information and system assurance like code injection, XSS attack, network scanning, wireless hacking, firewall configuration with iptable, digital signature with openssl, and also used Ubuntu as the development environment for several projects

PROJECT EXPERIENCE

UAV Ground Scanning System: Human Detection with Deep Learning **Advisor: Eric T Matson**
Team Leader in the IITP Technology Entrepreneurship Program *Jan 2021 - present*

- Set up the IoT devices, including the Raspberry pi, the GPS sensor and the infrared camera sensor(more intro of the problem
- Presented a novel human detection methodology based on deep convolutional neural network with UAV imagery
- Built and prepossessed the dataset including daytime and night infrared imaging taken from a high-altitude downward angle with Python and TensorFlow Object Detection API
- Implemented transfer learning with weights of YOLO v5 and SSD mobile net on the dataset
- Working on deploying and pushing warning messages with GPS information when human are detected when searching or rescuing events are operated

RoboMal: Malware Detection for Robot Network Systems **Advisor: Richard M. Voyles**
Undergraduate Research Assistant *Mar 2021 - Aug 2021*

- (problem, intro, goal)Developed the RoboMal dataset using the controller files of the publicly available autonomous car with Gazebo-based simulation for both robotic systems and simpler embedded actuator-based Cyber Physical Systems (CPS)
- Created a total of 450 binary executable and linkable format (ELF) files with 232 malware files and 218 good software files by modifying gains and scalars and manipulating the proportional–derivative (PD) control structure
- Built a bidirectional Long Short-Term Memory (LSTM) based model with embedding for identifying the maliciousness of the code with an accuracy of 85% and precision of 87% which outperforms than other methods like CNN, GRU, and ANN

Twitter Scraper *Jan 2021 - May 2021*

- Built a web scraping tool to obtain Twitter information by accessing and recording data from the Twitter website with Python library selenium
- Scraped information including user, handle, post dates, tweet texts as well as counts of reply, retweet and like.
- Cleaned the data and saved the data to CSV files
- Analyzed and visualized the data with Python libraires: pandas and matplotlib

E-Commerce Website
Team Leader *Aug 2019 - Dec 2019*

- Collaborated with 6 students to design and implemented front-end and back-end of the e-commerce website using HTML, JavaScript, CSS, PHP, MySQL
- Utilized distributed application architecture and deployed the database at the Oracle server
- Identified user requirements, drew ER, EER diagram, and created relational schema to build the database

AWARDS

- University-wide: Award for Best Visualization in Purdue's 7th Annual ASA DataFest Competition *2021*
- Undergraduate Research Grant: Reinforcement Learning Implementation in X-plane Automatic Flying *2020*
- National-wide: Top 40 and Finalist in the ITA Tech Challenge Programming Competition *2019*
- National-wide: Chinese Scholarship Council (CSC) Scholarship *2018*