YAN WANG

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EDUCATION

Vanderbilt University, Nashville, TN Aug 2017 – Dec 2020

Major Bachelor of Science, Computer Science and Mathematics **GPA** 3.942/4.00

Selected Coursework Program Design & Data Structures; Intermediate Software Design; Discrete Structures; Modeling & Simulation; Computer Organization; Programming Languages; Operating Systems; Concurrent/Parallel Java in Android; Algorithms; Foundations of Machine Learning; Advanced Machine Learning; VR Projects

Honors Vanderbilt University Dean's Honor List (all semesters); ICPC (ACM) 1st Place of Tennessee in 2019 Mid-Central Regional; Honorable Mention for CRA 2021 Outstanding Undergraduate Researcher Award

SKILLS

Programming Languages: C++, Java, Python, C#, JavaScript, HTML, CSS

Frameworks & Tools: Scikit-Learn, Keras, React, Node.js, SQL, Unity, Linux, AWS, Git, NetLogo,

RELEVANT EXPERIENCE

Software Engineering Intern at Institute for Software Integrated Systems June 2020 – Dec 2020

- Built the Cyber-Physical System and CNN models in Python to enable end-to-end learning on DeepNNCar.
- Increased the speed of DeepNNCar by 53% by Integrating Simplex Structure into autonomous driving design.
- Implemented VGG16 model for vehicle recognition with Keras and obtained 96.67% accuracy on 7325 images.
- Reduced 30% time of system construction by optimizing the development with the ALC Toolchain

Machine Learning Research Intern at Vanderbilt Hail Lab June 2019 – Aug 2019

- Developed a video pipeline with Scikit-Learn and Keras to recognize clinical procedures during emergency care and send real-time info of patients to receiving hospitals.
- Implemented the data pipeline in Python to process OpenPose JSON data and upload to AWS.
- Applied 8 classifiers to recognize 30 different clinical procedures from 1200 previous datasets.
- Improved the classification accuracy by 80% by switching from simple classifiers to LSTM-based CNN model.

Teaching Assistant at Vanderbilt Aug 2018 – Dec 2020

- Held 2 office hours per week and assisted students with programming assignments and exam reviews.
- Graded 200+ weekly Java programming assignments and led group discussions and peer review sessions.

PROJECTS

Personal Website: www.yanwanghunter.com (for additional information and research projects)

Face Search App + Mask Detection:

- Built a full stack web app utilizing OpenCV API to allow users to search for human faces in uploaded images.
- Designed RESTful backend server enabling user records to be stored persistently in database.
- Implemented the machine learning models to detect whether the face in an image correctly wearing a mask
- Improved the detection accuracy from 82% to 98% by switching from PCA-SVM pipeline to VGG16 model.
- Utilized: HTML, CSS, JavaScript, Python, Heroku, OpenCV, React, Node.js, SQL, Keras, Machine Learning.

Escape From Mars

- Developed a VR multiplayer Escape Game using Unity and C# that allows players to immerse themselves into the role of an astronaut on Mars who is searching for the way back home to Earth.
- Improved the performance and reliability of networking with Photon Unity Networking.
- Participated in the Agile software development and led team in the design and coding phases of the project.
- Utilized: C#, Unity, Photon Unity Networking, Agile Methodology.

Modeling Market Mechanism + Stock Prediction with LSTM

- Designed an agent-based Minority Game model in NetLogo to model the market mechanism.
- Implemented an LSTM-based Recurrent Neural Network to predict the stock prices for tech companies.
- Utilized: Python, Keras, TensorFlow, NetLogo, Deep Learning, LSTM.