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EDUCATION

Carnegie Mellon University | Pittsburgh, PA | Aug '17 - Dec '20
Major: Electrical and Computer Engineering, B.S. (Cumulative GPA: 3.33, Dean's List *Spring '19*)
Minor: Computer Science
Programming Coursework: Data Structures, Algorithms, Computer Systems, Web App Development
AI/ML Coursework: Artificial Intelligence for Social Good, Art and Machine Learning
ECE Coursework: Circuits, Digital Systems

SKILLS

Proficient: Python, Javascript, C, Linux; **familiar**: Java, C++, SQL, Matlab, HTML/CSS, Git.

WORK EXPERIENCES

Software Engineer | Siemens - Product Modeling & Simulation | Shanghai, China | Jun '19 - Present
- Created a metadata extraction tool for graphs and tables using **Python,** by developing a table-to-tree algorithm inspired by ID3 to capture the metadata hierarchical structure.
- Trained a title recognition model using SVM and TF-IDF for more accurate metadata extraction.
- Refactored the existing backend code to make it more readable, scalable, and testable.

Research Assistant | Cylab - General Motor Autonomous Vehicle | Pittsburgh, PA | Jul - Aug '18
- Increased the training image annotation speed by 4 times, by creating new UI features for an internal annotation tool built with PyQt using **Python** and OOP principles.

PROJECTS

For more information about the projects, please go to http:/yuhanx.com/

Pet Advertisement Evaluation | Team Co-lead | Popular Poster Award
- Built and optimized a dense neural network using **Pytorch**, **AWS** and **Jupyter Notebook**, and trained it with 15K animal profile data with 23 features, achieving a prediction accuracy of 87%.
- Treated class imbalance by experimenting a weighted cross entropy with different focal intensities, and tackled missing data, that make up 12% of the dataset, using a probabilistic approach.
- Improved the performance further through better data representation and data augmentation.

Deep Nightmare | Team Member
- Reimplemented the DeepDream algorithm in **Pytorch**, to train ML models to create horror images.
- Created an interface using **Python** for users to interact with trained images in real time.
- Scraped 3K horror images using **Selenium** for the customized training dataset.

Food Ordering Web App | Team Lead
- Developed a RESTful web application for students to order food and arrange pickups at selected locations on campus, utilizing **Django, SQL, HTML/CSS** and **Javascript**.
- Created a suite of analytics features for vendors, by integrating multiple chart APIs.
- Tested and debugged for security loopholes, and deployed on AWS.

MagicMirror^2 module | Solo Project
- Built a program using **Javascript** and **AJAX** to display real-time nearby Pittsburgh public transport information, as a third party module to an open source smart mirror project, MagicMirror^2.
- Tested, debugged and deployed using **Node.js** on a smart mirror powered by **Raspberry Pi**.

Smart Photo Curator | Team Member
- Built an **Android** app prototype that ranks photos based on the facial expressions of portrayed subjects, using an algorithm developed using Google and Microsoft Facial Recognition APIs.

LEADERSHIP

Vice President | IEEE CMU Student Chapter | Oct '18 - May '19
- Managed one of the biggest and most inclusive CMU ECE undergraduate organizations.
- Oversaw the planning of social and professional events for the ECE undergraduate community.

AWARDS

- Participated in 2019 Goldman Sachs Summer Insight Series, selected out of hundreds of applicants.
- Led teams to win 3 awards in 2019 IEEE Student Activities Conference, among 20+ schools:
  - 1st place in robotics competition, 2nd place in hackathon, 3rd place in circuit building competition.