Shuning Jiang

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Seeking entry-level software engineer position. Skilled with hands-on experience in visualization, data analysis, deep learning, and full-stack development demonstrated through diverse research projects.

Education

• The Ohio State University, Computer Science and Engineering

08/2019 - current

• Cumulative GPA: 3.52

• Research Assistant: Interactive Visual Computing Lab

• B.S., University of Electronic Science and Technology of China, Software Engineering

09/2015 - 07/2019

• Thesis: Automatic Vehicle Detection and License Plate Recognition System

Selected Research Projects

• Pathologists' gaze analysis | JavaScript, OpenSeadragon, Python, PyTorch

09/2022 - current

- Engineered a toolkit for tumor annotations while simultaneously tracking pathologists' eye movements. Visualized
 pathologists' eye gaze data and analyzed the gaze pattern. Removed noisy data based on pattern analysis.
- Designed an algorithm that extracts pseudo ground truths from gaze data and demonstrated the feasibility of training neural networks using pseudo ground truth alone while maintaining comparable accuracy.
- Quantifying image complexity | JavaScript, Node.js, PHP, MySQL, Nginx, Python

06/2023 – current

- Built a full-stack online experiment platform using jsPsych and MySQL. Used Nginx for load balancing to support tens of thousands of concurrent requests and easily scale up.
- Calculated images' complexity scores using TrueSkill algorithm. Categorized the factors that make images complex such as shape/color diversity and clutters.
- Brain imaging annotation toolkit | C++, Qt, OpenGL, OpenVR

08/2019 - 02/2023

- Developed a toolkit on top of Vaa3D for evaluating participants' annotation speed and pattern in virtual reality or desktop environments.
- Compared accuracy in both environments and found that annotation in VR environment is 12.9% more accurate.
- Similarity-based pathology image retrieval | Python, TensorFlow, OpenSeadragon, D3.js

08/2020 - 09/2021

- Benchmarked multiple image feature extraction algorithms and retrieved similar images in the database.
- Developed a web application enabling users to select custom areas of whole-slide images and receive recommendations of similar images.
- Online vape shop scraping | Python, BeautifulSoup, Selenium, PyTorch, spaCy

02/2021 – current

- Scraped online vape products using various tools and techniques, such as Selenium for structured HTML content,
 YOLO and OCR for images, and spaCy and LLM for unstructured textual information.
- Identified 134 new terms and phrases of flavor descriptions using spaCy and LLM.
- Graphical perception with CNNs | Python, Keras

08/2019 - 02/2023

- Evaluated convolutional neural networks' performance on graphical perception tasks and fairly compared it to human performance. Quantified the effect of data sampling on CNNs' accuracy.
- Revealed that CNNs have no human-like chart preference, cannot extrapolate, and are not robust to short bars.
- Automatic vehicles detection and recognition system | Python, OpenCV, Keras

01/2019 - 04/2019

• Implemented a system utilizing convolutional neural networks to automatically detecting and re-identifying vehicles based on license plate, vehicle model, and color.

Skills

- Programming Languages: Python, C/C++, JavaScript, HTML/CSS, Java, R
- Framework/Libraries: TensorFlow, Keras, PyTorch, OpenCV, Qt, OpenGL
- Tools: Git, Linux, MySQL, Nginx, Selenium, Unity