Robert Yang

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Education

Stanford University (GPA: 4.08/4.0) – Stanford, CA **Sep 2018 – Jun 2022**

Major: Computer Science, Artificial Intelligence track.

Coursework: Deep Learning, Computer Vision, Language Processing, Autonomous Systems, Applied Matrix Theory, Impact of AI, Data Analysis, Probability for Computer Scientists, Systems Engineering, Data Structures, Cybersecurity, Cryptography, Computer Organizations and Systems, Principles of Computer Systems (filesystems, multiprocessing, multithreading, networking), Computer Science Theory, Multivariable Calculus, Introductory Making

Anticipated Coursework: Decision Making Under Uncertainty, Reinforcement Learning, NLP with Deep Learning, Convolutional Neural Networks for Visual Recognition, CS229 Machine Learning, Data Mining

Skills

Technical Skills: Computer vision; data processing; deep learning; machine learning; data analysis; Unix; object-oriented programming; data structures; introductory algorithms; simulation

Languages: Python (NumPy, Matplotlib, Keras, TensorFlow, Pandas); C; C++; HTML/CSS/JavaScript; MATLAB; Java; R

Experience

Geophysics Research Assistant – Stanford, CA **Jul 2020 - Sep 2020**

- Developed automated generation of analog seismogram images to produce a 6,405-image dataset using over 10,000 hours of data
- Fine-tuned **Mask-RCNN** model using **Keras** and **TensorFlow** to precisely detect and correct deflections in signal

GANime: Generating Manga/Anime Character Sketches From Drawings - Stanford, CA Jan 2020 - Mar 2020

- Using **TensorFlow**, **Python**, **Google Colab**, and **AWS**, we developed and evaluated three models (**Neural Style Transfer**, **Pix2Pix**, and **CycleGAN**) and used them to generate fully colorized drawings from sketches. On a sample size of 100, we achieved a FID of 220.5 and a SSIM index of 0.76

Geophysics Research Assistant – Stanford, CA **Jul 2019 – Sep 2019**

- Wrote signal processing pipeline using **Python** (**NumPy**, **ObsPy**, and **SciPy**) to remove noise in earthquake data
- Designed earthquake detection pipeline using **edge detection** and **k-means clustering**:
    - Used **NumPy**, **ObsPy**, **SciPy**, **Matplotlib**, and **cv2** to preprocess signals from seismometer
    - Programmed **edge detection algorithm** to augment earthquake events
    - Utilized **NumPy** to build **k-means clustering** to quickly and accurately gather all 10-second segments with earthquake events
- Utilized **STA/LTA picking** as an alternative to above pipeline

TreeHacks 2019 – Stanford, CA **Feb 2019**

- Designed, implemented, and tuned a 5-layer **Deep Neural Network (DNN)** using **NumPy** and **Keras** to predict mood based on everyday habit; shipped model to iOS app using **CoreMLTools**

Awards and Leadership

Webmaster and **Social Chair**, Stanford Team HBV (19-20)

- Design new additions to the club website with regular updates; plan social events for the club

Best Overall Hack, **WiCS Prize**, **Pear Prize** at Hack Overflow 2019

- Created an info website using **HTML** and **CSS** to direct the right resources to sexual assault victims
- Made important design decisions to provide the most soothing and comfortable experience

Honorable Mention at 2016 **International Olympiad** in Astronomy and Astrophysics (**IOAA**)

President, Lynbrook Philosophy Club (17-18)

Co-President, Asian Pacific American Students for Leadership (17-18)

Co-Chair, Team HBV HS Board (17-18)

References

Professor William Ellsworth, Department of Geophysics, Stanford (wellsworth@stanford.edu)

Dr. Mostafa Mousavi, Department of Geophysics, Stanford (smousavi05@gmail.com)