Andy Zhang

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Education

Cornell University

B.S., Computer Science // 2016-2020

- Honors Data Structures and Object-Oriented Programming, Introduction to Algorithms, Functional Programming, Signals and Systems, Discrete Math, Algebra, Digital Logic and Computer Organization

Experience

Computer Vision Intern

SRI International // Summer 2017

- Developed a program to detect, identify, and extract facial features of people in a given video.
- Improved SLAM algorithms for movie-oriented camera pose tracking.
- Created a pipeline for applying deep neural networks for object detection in videos.
- Used Docker to support cross-platform usage.

Computer Vision Developer

Cornell Unmanned Air Systems // Present

- Focus on real-time Automatic Detection, Localization, and Classification (ADLC) of salient targets captured from high-altitude UAVs.
- Implemented a custom segmentation algorithm for filtering and extracting salient targets from pictures taken at high-altitude.
- First successful end-to-end ADLC module in team history.

Morphometrics Research Intern

U.C. Santa Cruz // Summer 2015

- Used Fourier Analysis and chain-coding algorithms to quantify and compress the morphology of nautiloids.
- Used Principal Components Analysis to visualize the trends in nautiloid morphology throughout their history.

Skills

Languages (proficient to novice)

- Java, Python**,** JavaScript, C++, HTML, CSS, MATLAB, R

Libraries (proficient to novice)

- OpenCV, Scikit-learn, Tensorflow, Django, Docker, ROS

Misc. (proficient to novice)

- Git, UNIX, PostgreSQL

Projects

modemo (in progress)

- Web application using NLP to detect and quantify political bias in articles.
- Custom algorithm for computing political bias score using a skip-thoughts learning model.
- Sentiment analysis incorporated for added flexibility in handling semantic exceptions.
- Trained a Support Vector Machine (SVM) for determining political bias as a regression problem.
- Made with Python, React/JS, Keras, and Theano.

fmxnet

- Modular face analysis program that detects and tracks faces in a video with deep learning.
- Face attribute extraction using a trained neural network on the CelebQA dataset.
- Dockerized into a container for cross-platform use.
- Made with Python, Tensorflow, dlib, and mxnet.

baeML

- Web application using ML to offer personalized content designed to counteract the echo-chamber effect of social media.
- Key components include a React frontend, Skip-gram learning model, database, and webcrawler.
- Made with Python, React/JS, and Tensorflow.

orbslam_face

- Implemented algorithm for Simultaneous Localization and Mapping (SLAM) customized for camera pose tracking in movies.
- Dockerized into a container for cross-platform use.
- Made with C++, OpenCV, and ROS.

Critter World

- World simulation with “critters” modeled by a custom language, compiler, interpreter, and GUI.
- The world is maintained by a server, and multiple clients connecting to the world can request updates to the world state.
- World state is implemented as a diff and tracked according to the time-steps advanced in the server’s world.
- Made with Java.

Visual Yelp

- Android app combining Yelp and Google Maps APIs to deliver a visual-oriented restaurant search service.
- Users can specify a cuisine or a type of food, and choose nearby restaurants based on real pictures of their food.
- Made with Java on an Android platform.