Haonan Zhang

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EDUCATION

University of New South Wales Sep 2019 - Sep 2021

Master of Information Technology. Faculty of Engineering Sydney

- **Related courses:** deep learning, machine learning and data mining, artificial intelligence, human-computer interaction, data structure and algorithms, database systems, computer networks and applications

Hanshan Normal University, China Sep 2014 - Sep 2018

Biology Science. Bachelor Faculty of Biology Sciences. Chaoshan

PROJECT EXPERIENCE

Personal Website Jul 2021 - Aug 2021

Owner Sydney

Website: https://conanzahn.github.io/Haonan-Website/

- Skills: Git, GitHub, React, Javascript, styled-components, CSS, Sass, npm, Bootstrap.
- Using create react app as the framework to build my personal website.
- Successfully deployed to AWS ES3 and GitHub Pages.
- Design website interface.

Eatery Voucher Website Jun 2021 - Aug 2021

Leader & Front End Developer & Scrum Master Sydney

- Skills: Jira, Git, GitHub, React, Javascript, styled-components, CSS, Sass, npm, Axios, Bootstrap, Material-UI.
- Lead a 5-people team with 2 frontend developers and 3 backend developers.
- Objective: Design and Implement a website software that provides restaurant discount vouchers. Includes two different user types for specific demands: diners and eateries.
- Main features: Allows eatery users to create and verify vouchers; Allow diner users to search, navigate, and book vouchers. Also provides recommendation and subscription features. All users can create and manage their accounts.
- Design project proposal, construct all possible user stories and design a road map of the project.
- Using Jira to manage team member's co-operate, assign tasks to team members. I have created six sprints for this project, each sprint contains some features that support user stories.
- Responsible for front-end development, using React app to build front-end framework and npm as the package manager.

- Using Django as backend framework.
- Using GitHub to manage project code.
- Using Git command to manage version control.
- Use javascript, styled-components, CSS, Sass.
- Use Axios to connect front-end and back-end.
- Use React-Bootstrap and Material-UI as the third part of functionality licensing.
- Design website interface.

Velocity Estimation and Lane Detection (Computer Vision) Apr 2021 - Apr 2021

- Skills: Python, OpenCV, Scikit-Learn, Matplotlib, SciPy, Numpy.
- Responsibility: Driving Lane Detection.
- Method of Driving Lane Detection divided into three parts: Dataset Preprocessing, Detection, Optimization.
- Extract Region of interest(ROI) from the whole training data set.
- Apply the Gaussian smoothing algorithm to remove noises.
- Combine RGB and HSV colour spaces with specific thresholding.
- Use the canny edge detector to find the boundary position of the driving lane.
- Apply the Hough Transform as a feature extraction technique to detect whether a line exists in the edge image.
- Averaging and extrapolating are chosen to optimize the results, the reason is that each driving lane lines in the image have a different slope, using this can grouping and dividing lines.

Vehicle Detection (Computer Vision) Mar 2021 - Mar 2021

Skills: Python, OpenCV, Scikit-Learn, Matplotlib, SciPy, Numpy.
Preprocessing: Extract vehicle image regions(ROI) from the whole training data set, using the 'bbox' message from the annotation file.
Feature extraction: I select the histogram of oriented gradients(HOG) method to extract features.
Classifier: Use support vector machine (SVM) model.
Object Detection: Use sliding window technology to search vehicles in images.

Classification and rating prediction for user reviews (deep learning model) Sep 2020 - Nov 2020

Sydney

- Write a Pytorch program to analyze review scores and industry classification.
- Use NLP methods such as regular expression, stem extraction, and stop words to preprocess the data.
- Construct a two-way LSTM neural network and the corresponding loss function.
- Train the model, analyze the results and adjust the hyperparameters of the training model, and repeatedly debug to get the best performance parameters.
- Use the model to predict user reviews, and finally achieved 90% accuracy in the test.

Rossmann sales forecast (machine learning)-Kaggle competition project Jun 2020 - Jul 2020

Sydney

- https://github.com/conanzahn/Rossmann-sales-forecast-Machine-Learning-.git
- Preprocess the data, clean the data.
- Build Ridge model, Lasso model, decision tree model, random forest model, integrated model to analyze and predict the database.

Sentiment analysis for Twitter user comments Jun 2020 - Jul 2020

Sydney

- Perform text preprocessing on the Twitter comment data set.
- Build decision tree models, Bernoulli models, and polynomial models for the data set, and perform model training on the data set.

SKILLS LIST

- **Web development:** React, HTML5, CSS3, SASS, Javascript ES6, ReactJS, Node.js, Axios, Responsive Design, UI/UX Design, Bootstrap, Material-UI, Font Awesome, NPM, Webpack.
- **Develops Tools & Platforms:** Jira, Github, Bitbucket, Git, Amazon, Postman
- **Methodologies:** Agile/ Scrum.
- **Database:** Familiar with common features of SQLite, MySQL and PostgreSQL for database query and construction of query programs.
- **Python**: Familiar with common features of Python, able to use metaprogramming appropriately to solve problems elegantly. Jupyter, Pandas, Numpy, Scikit-Learn, Tensorflow + Keras, OpenCV, Matplotlib, SciPy.
- **C**: Familiar with C language data structure and algorithm.

EXTRACURRICULAR ACTIVITIES

Debate Competition Oct 2015

Excellent debater Chaoshan

MISCELLANEOUS

- **Skills:** Python, C, Front-end, React, Web Development, SQL, Xmind, Sketch, Office, Photoshop, Lightroom.
- **Certifications:** Teacher qualification certificate, Mental health education C certificate, Mandarin level certificate
- **Languages:** English (IELTS: 6.5), English (CET-6), English (CET-4), Mandarin (Level 2)

- **Interests:** Coding, Design, Video Games, Photography, Cooking, Travel , Reading, Podcast.