ZIKUN CHEN

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EDUCATION

University of British Columbia, Canada   *September 2017 - Present*
Bachelor of Science, Combined Major Computer Science and Statistics   Overall GPA: 4.33/4.33

- Trek Excellence Scholarship (top 5%) , 2018

- Charles and Jane Banks Scholarship , 2018

Simon Fraser University, Canada   *September 2016 - August 2017*
Bachelor of Science   Overall GPA: 4.33/4.33

- SFU Alumni Scholarship Fund, 2017

Hunan University, China   *September 2015 - March 2016*
Bachelor of Science

RESEARCH EXPERIENCE

Summer Research Assistant   *May 2019 - August 2019*
Department of Computer Science, University of British Columbia

Worked with Dr. Frank Wood, developed a novel generative adversarial network setup targeting at removing droplets from images captured in rain, featuring autonomous driving scenarios.

- Explored and remodeled existing droplet removal models for our purpose: removing droplets from real-world images collected by dash cameras in vehicles.

- Identified flaws in the architecture of existing droplet removal models and attempted to address the problems through various approaches, including data preprocessing, hyperparameter tuning, architecture innovation.

- Built pipelines for evaluation of our model on the task of droplet removal, and also for performance of pre-trained models for important downstream tasks including semantic segmentation, lane detection, etc., on images with droplets before and after removing them.

PUBLICATIONS

- DROPS: droplet removal off photographic sensors (in progress, 2020 CVPR)

PROJECT EXPERIENCE

Domain Shift for Semantic Segmentation (current)
CPSC 448,UBC

- Directed studies project in school, supervised by Dr. Frank Wood.

- Aims to develop an approach that addresses the domain shift problem semantic segmentation algorithms are faced with.

House Prices: Advanced Regression Techniques (2019)   *Scored Top 8%*

- Kaggle competition. Preprocessed and performed feature engineering on data of residential homes. Applied advanced regression techniques including stacked regressions to predict sale prices of homes.

Attentive Gan with U-Net (2019)

- Combined a generative adversarial network with the U-Net to tackle the problem of removing droplets from images. The U-net was trained on paired data of rainy images and corresponding binary mask for rain, which outputs an attention map that guides the generative adversarial network to focus on rainy areas. The masks were obtained by taking the difference between rainy image and the clean image of the same scene.

Titanic: Machine Learning from Disaster (2019)

- Kaggle competition. Processed and analyzed data of passengers on Titanic, using scikit-learn packages such as randomForestClassifier to predict which passengers would survive the tragedy.

Campus Explorer(2018)

- Programming homework(group work). Using Typescript and Javascript, built a query engine that retrieves information from the project website and builds queries to find courses or classrooms that meet requirements specified by the user.

FoodCourier System (2018) *Team Leader*

- Relational databases course project group work)

- Using Java and MySQL, created an app that allowed customers to order food in different restaurants, restaurant managers to keep track of the orders and the income report, and couriers to deliver food.

- Responsible for writing UI and part of the database connection code, as well as writing some SQL queries and most of the debugging stage. Communicated with team members extensively to keep the project on the right track.

Buses are Us (2017)

- Programming homework (Individual). Wrote functions in Java based on existing frames that display schedules of buses at different bus stops, update the locations of buses and draw the bus routes based on real-time data provided by Translink.

SKILLS/LANGUAGES

Programming Languages

- Python (Advanced)

- Java (Advanced)

- R (Advanced)

- JavaScript (Intermediate)

- C++ (Intermediate)

- SQL (Intermediate)

Software & Tools

- Matlab

- Latex

- Excel

INTERESTS

- With great interest in painting, continuously practiced digital painting since middle school.

- Advanced Japanese skills. Passed JLPT N1 at the 95% percentile in 2016.