Xiaoyu (Erin) Zhang

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Carnegie Mellon University, Class of 2021,
Bachelor of Science in Computer Science

Working Experience

Uber Advanced Technologies Group / Software Engineering Intern, Prediction Team
June 2020 - August 2020, Pittsburgh, PA

- Programmed new node connecting methods for graph networks used to predict future trajectories of road actors.
- Investigated impact of new graph structure and evaluated the new graph models by designing new precision-recall and trajectory metrics.

Uber Advanced Technologies Group / Software Engineering Intern, Simulation Team
June 2019 - August 2019, Pittsburgh, PA

- Devised and programmed a self-driving car (SDV) test selection tool based on genetic algorithm, which picks out a handful SDV test cases to run in. simulation out of thousands of variations in order to cover different kinds of SDV behaviors and expose SDV shortcomings.
- Trained machine learning models to predict SDV metrics from parameters of a testing scenario.
- Built user interface to interact with the tool in React JS and set up the backend of the website on Amazon Web Service.

Research Experience

CMU Intelligent Autonomous Manipulation (IAM) Lab of Professor Oliver Kroemer
October 2020 - PRESENT

- Investigating methods to transfer real-world scenarios into simulated engines to predict effects of robot actions in the scene.
- Refining 3D reconstruction algorithm that retrieves closest 3D model from database based on feature-similarity to input image by evaluating reconstruction quality with Q-value.

CMU Neurogenomics Lab of Professor Andreas Pfenning
June 2018 - January 2020

- Modified USCS program, doBlastzChainNet, to generate pairwise alignment between species using Perl and Bash.
- Created a program in Python and Bash to process open chromatin data and find orthologous regulatory regions of genomic sequences in research on the evolution of vocal learning.
- Compared and evaluated features of transcription factor binding motifs within orthologs between brain and liver tissues of mouse and human.

Wyvern, CMU Professor Jonathan Aldrich Group
January 2019 - June 2019

- Improved the lexer and parser to accomodate for the use of domain specific language in Wyvern
- Designed and implemented the collection library for Wyvern.

Teaching Experience

CMU 15-312 Functions of Programming Languages
January 2020 - May 2020

CMU 15-150 Functional Programming
January 2018 - December 2018

- Collaborated with fellow TA's to create and grade homework.
- Organized and taught recitation for 30 students every week.
- Explained course material and helped with homework problems during office hours.

Publications

- Xiaoyu Zhang, Irene M Kaplow, Morgan Wirthlin, Tae Yoon Park, Andreas R Pfenning. HALPER facilitates the identification of regulatory element orthologs across species. Bioinformatics 2020.