Jerry Kong

Apt 403, 5330 Pershing Ave
St.Louis, MO 63112
(+1) 314 465 5758
jerry.kong@wustl.edu

Education

9.2020–Now **Ph.D. in Computer Science,** *Washington University in St. Louis*.
- Working on efficient and effective graph learning algorithms.
- Applying ML techniques to clinical fields.

9.2016–9.2020 **B.S./M.S. in Computer science,** *Washington University in St. Louis*.
- Major GPA: 3.91. Cumulative GPA: 3.84.
- Finishing **joint M.S.** program at the same time as B.S. in four years.

Research Experience

9.2022–Now **Q-learning on Graphs**
Adviser: Dr. Yixin Chen.
- Proposed Q-learning with Graph Neural Networks(GNNs).
- Significantly improve the efficiency of current subgraph GNNs.
- Maintain the effectiveness of more power for GNNs.

5.2021–4.2022 **Geodesic Graph Neural Network**
Adviser: Dr. Yixin Chen.
- Proposed efficient and versatile Graph Neural Network.
- Achieved SOTA performance on link prediction.
- Led to publication in NeurIPS 2022.

4.2020–9.2020 **COVID-19 Pandemic Effect modeling**
Adviser: Dr. Yevgeniy Vorobeychik.
- Modeled the effect of social distancing in non-cooperative and socially optimal setting.
- Developed theoretically optimal algorithm and its implementation to obtain optimal social distancing.
- Proposed contact model based on traffic/travelling data and simulate the result on the model.

2.2019–8.2019 **Contaminated Image Effect on Image Classification**
Adviser: Dr. Yevgeniy Vorobeychik.
- Analyzed the effect of blocking part of the images to neural network image classification.
- Fine-tuned a VGG-16 network on the PASCAL VOC data set for image classification.
- Combined the classification model with a regression head to do object localization.

6.2018–8.2018 **Autonomous PiCar Sensor System Construction**
Adviser: Dr. Xuan Zhang.
- Added multiprocessing functionality to the sensor data logging program for accurate timestamp logging.
- Implemented a socket program for auto data transferring between two machines.

5.2018–6.2018 **Sensor Data Logging on PiCar**
Adviser: Dr. Xuan Zhang.
- Designed and implemented a program for fast sensor data storage on Raspberry Pi.
- Examined Raspberry Pi's memory hierarchy using pointer chasing method.
- Designed auto-adjustment pipeline to synchronize the data.

Work Experience

5.2019–8.2019 **Software Engineer Intern,** *Google*.
- Developed a pipeline supporting Google Hotel website to produce a user data generated tip.
- Implemented efficient map reduce program to gather, process, and generate data sets.
- Wrote design document and made a presentation to inform a wide audience in Google Hotel team.

Projects

10.2019–present **Model Hyperparameters Optimization**.
- Optimized a Gaussian Process Regression model on a benchmark of SVM hyperparameters.
- Implemented a Bayesian Optimization procedure to find the best hyperparameters for the SVM.

2.2019–5.2019 **Adversarial Image Generator on Image Classification**.
- Re-produced the results and implemented the methods in *Intriguing Properties of Neural Networks*.
- Provided specification of L-BFGS optimization method that are either vague or missing from the paper.
- Applied model distillation to the neural networks being attacked and achieved successful defense results.

3.2019–5.2019 **Domestic Flight Data Visualization**.
- Processed USA Airport Data with different granularity for visualization using Spark.
- Combined flight data with historical data to display the effect of historical event on flight industry using D3.js.

Skills

Language: C++, Python, Java, SQL, Javascript, PHP, HTML, LaTeX, Mathematica

Tool: Linux, Hadoop, D3.js, Tensorflow, AWS, git