Inwon Kang

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Research Interests

Deep Learning, Efficient Learning, Explainable Machine Learning

Education

Ph.D. in Computer Science 2022.08 - Current
Rensselaer Polytechnic Institute
Advised by Professor Oshani Seneviratne. My current research focus is on interoperability of blockchain systems.

M.S. in Computer Science 2021.08 - 2022.05
Rensselaer Polytechnic Institute
Advised by Professor Lirong Xia.
My final project was on collection&analysis of a dataset on human perception of Gerrymandering.

B.S. in Computer Science 2017.08 - 2021.05
Rensselaer Polytechnic Institute
Concentration in AI/ML

Experience

Research Assistant | *Rensselaer Polytechnic Institute* 2022.08 - Current
Blockchain, Hyperledger

- Funded by CRAFT center to investigate and implement a framework for interoperability in disparate blockchain systems.
- Using Hyperledger Cactus to implement prototype.
- Published a survey paper in IEEE BigData 2022 Workshop.

Research Intern | *IBM – T.J. Watson Center, Yorktown NY* 2023.05 - 2023.08
Deep Learning, Foundation Model, Data Distillation

- Worked as a research intern in AI & Automation department.
- Implemented and experimented with an an automated AI pipeline using ray tune and pytorch.
- Accepted to AAAI Student Abstract track.

Undergraduate Researcher | *Rensselaer Polytechnic Institute* 2020.10 - 2021.05
Crowdsourcing, Explainable AI

- Joined Professor Lirong's group as an undergraduate student and worked on various projects, such as conducting surveys through Amazon Mechanical Turk to collect datasets and using GNNs to build NLP models that improved on past works.
- Built a website using Google sheet's API as a database to collect user responses for a survey on human perception of fairness in Gerrymandering.

Skills

Programming Languages:

- Comfortable with: Python, Javascript, TypeScript
- Have used: Java, C, C++, Solidity, C#

Machine Learning Libraries:

- Comfortable with: pytorch, pytorch-geometric, scikit-learn, opencv, torchvision, nltk, spacy, pandas, numpy
- Have used: jax, tensorflow, keras

Web Frameworks:

- Comfortable with: Django, FastAPI, Flask, React.js, Next.js
- Have used: .Net

Environments:

- Comfortable with: Linux (Debian-based), OsX
- Have used: Docker

Awards & Achievements

- *AAAI-24 Student Scholarship*
- *Letter of Recognition* – Graph Mining (CSCI-4964), Spring '20
- *RPI Dean's Honor List* – Spring '20, Fall '20, Spring '21

Publications

I. Kang, P. Ram, Y. Zhou, H. Samoluwitz, O. Seneviratne *Effective Distillation for Tabular Datasets (Student Abstract)*, AAAI-24 – Conference

I. Kang, W. Van Woensel, O.Seneviratne, *Using Large Language Models for Generating Smart Contracts for Health Insurance from Textual Policies*, W3PHIAI-24 – Workshop

I. Kang, Q. Han, L. Xia, *Learning to Explain Voting Rules*, AAMAS–23 – Extended Abstract

F. Mohsin, **I. Kang**, Y. Chen, J. Shang, L. Xia, *Dependency and Coreference-boosted Multi-Sentence Preference model*, DLG-AAAI-23 – Workshop

I. Kang, A. Gupta, O. Seneviratne, *Blockchain Interoperability Landscape*, IEEE BigData-2022 – Workshop

F. Mohsin, L. Luo, W. Ma, **I. Kang**, Z. Zhao, A. Liu, R. Vaish, L. Xia, Making group decisions from natural language-based preferences, *Making group decisions from natural language-based preferences*, COMSOC-21

F. Mohsin, **I. Kang**, P.Y. Chen, F. Rossi, L. Xia, *Learning Individual and Collective Priorities over Moral Dilemmas*, MPREF-22 – Workshop (IJCAI)

I. Kang, M. Mandulak, B.K. Szymanski, *Analyzing and predicting success of professional musicians*, Scientific Reports – Journal, 2022

B. Kelly, **I. Kang**, L. Xia, *Crowdsourcing Perceptions of Gerrymandering*, HCOMP-22 – Conference/AAAI