Jiakai (Victor) Shi

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SUMMARY

- An innovative problem-solving with proven experience in handling ill-defined tasks and design thinking capability.
- A reliable and enthusiastic team player who can also handle tasks independently.
- Skilled programming/coding rich experience in applying adaptive learning algorithms to solve real-life problems.

EDUCATION

Bachelor of Science: Specialist in Computer Science, Major in Statistics | GPA: 3.77/4.0 **Sep. 2017 - Jun. 2022**
University of Toronto *Toronto, ON*
Honors and Awards: Dean List (Winters 2020 & 2021), SUDS Award (Summer 2022)

Master of Engineering in Electrical & Computer Engineering **Sep. 2022 - Exp' Mar. 2024**
University of Toronto *Toronto, ON*

RESEARCH & WORK EXPERIENCE

Research Scholar **Jun. 2022 – Aug. 2022**
Data Science Institute at University of Toronto *Toronto, ON*
Explore designs of prompts and optimize Large-Language Models like GPT-3 in mental health chatbots
- Developed a Flask chatbot interface with API connections to OpenAI's GPT3-models for generating messages.
- Designed a randomized factorial experiment with 945 participants on Mechanical Turk for testing prompts in GPT-3 model.

Automate simulations for varying real-world scenarios of adaptive experiments
- Ran simulations with multiple Multi-Armed Bandit Algorithms with Thompson Sampling in Python.

Develop RESTful APIs in online framework for running adaptive experiments
- Develop APIs for designing sampling policies in adaptive experiments and downloading data from Django datastore for analysis.

Undergraduate Research Assistant **Sep. 2020 – May. 2022**
Intelligent Adaptive Interventions Lab at University of Toronto *Toronto, ON*
Design software interventions to encourage participants taking vaccines against COVID-19
- Performed randomized adaptive experiments for message personalization to encourage participants taking vaccines during the spread of COVID-19.
- Designed multi-armed bandits algorithms for message content factorization.

Build intelligent self-improving technology for student education & health by integrating machine learning, statistics, economics, and computational social science knowledge. [Project Link]
- Assisted researchers in designing reinforcement learning models and algorithms, including multi-armed (contextual) bandits for optimizing the effectiveness of how certain message sequences motivate users (aka reward in multi-armed bandit).
- Built and utilized Azure Bots Framework (C#) and Django web app (Python) integrating Twilio for generating/sending/receiving text messages that send to & receive from users and storing user information.
- Integrated reinforcement learning models and algorithms with SMS by connecting Django web app with the component of the interface, called MOOClet Engine, which allows researchers to deploy multi-armed (contextual) bandits algorithms for experiments.

PRESENTATIONS

- Harsh Kumar, Taneea S Agrawaal, Kwan Kiu Choy, **Jiakai Shi**, and Joseph Jay Williams. 2022. "Sounds like a Cheesy Radio Ad": Using User Perspectives for Enhancing Digital COVID Vaccine Communication Strategies for Public Health Agencies. In Extended Abstracts of the 2022 CHI Conference on Human Factors in Computing Systems (CHI EA '22). Association for Computing Machinery, New York, NY, USA, Article 288, 1–7. https://doi.org/10.1145/3491101.3519760

PROJECT EXPERIENCE

Unitify | *JavaScript, React Native, Expo, MongoDB* | Developer | GitHub | Demo | Website **Dec. 2022 - Jan. 2023**
- Designed and developed a mobile app (Android & IOS) to encourage people to user more sustainable modes of transportation.
- Integrated Google's Directions, Place details, route search, and autocomplete from Google Maps Platform.

Intelligent Chat Assistant | *Python, Flask, AWS Cloud Service, HTML/CSS* | Developer | GitHub **Nov. 2022 - Dec. 2022**
- Implemented a web-app for users who want to have an instant chat with a GPT-3 Chatbot.
- Used AWS Lambda function to remove data stored in AWS S3 and Dynamo DB.

DRPI-CGAN | *Python, PyTorch, Git* | Developer | GitHub **Mar. 2022 - May. 2022**
- Designed and implemented Detection and Restoration of Photoshopped Images using Convolutional GAN model.
- Analyzed the accuracy and efficiency of model for facial image manipulation detection and recovery.

TECHNICAL PROFICIENCY

- **Languages**: Python, Java, JavaScript, React Native, HTML/CSS, R.
- **Developer Tools**: Git, SQL, Pandas, Seaborn, Django Rest Framework.
- **Frameworks**: PyTorch, Django, Flask.