Peter(Shengbang) Tong

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Education

The University of California, Berkeley Aug 2019 - May 2023

- Majors: Pure Mathematics, Computer Science, Statistics | College of Letter and Science
- GPA: Currently 3.91/4.00, Honor: Kraft Award
- Selected Courses(**Graduate Level Courses**): **Deep Reinforcement Learning(CS285)**, **High Dim Data Analysis with Low-Dim Models(EECS208)**, **Introduction to Machine Learning(CS189**), **Convex Optimization(EECS227BT)**, **Optimization Models(EECS127)**, **Matrix and Numerical Linear Algebra(MATH221)**, **Design of Societal Scale System(EECS290),** Concept of Probability(STAT134/135), Game Theory(STAT155), Introduction to Analysis(MATH104), Introduction to Complex Analysis(MATH185)

Research Experience

UC Berkeley Artificial Intelligence Research Lab (BAIR) May 2021 - Present

Mentor: Prof. Yi Ma

- Developed a Generative model based on the derivation of Maximum Code Reduction (MCR): Created a new formulation of Learning Discriminative Formula(LDR) from MCR framework. Achieved State-of-Art evaluation result. Submission made to Entropy Journal**.** Arxiv**:** Closed-Loop Data Transcription to an LDR via Minimaxing Rate Reduction: https://arxiv.org/abs/2111.06636
- Developing a novel approach to solve the Incremental Learning Problem via LDR. It is the first framework that resolves the Incremental Learning on both Generative and Discriminative model. Arxiv: Incremental Learning of Structured Memory via Closed-Loop Transcription: https://arxiv.org/abs/2202.05411

Undergraduate Research Apprentice Program, Haas Business School Feb 2020 - Aug 2021

Mentor: Prof. Anastassia Fedyk

- Developed a Seniority Prediction Algorithm for employees across the world: Built a model that predicts the seniority of an employee from scratch. Building models include labelling data, model selection, visualization, efficiency improvement and model packaging. The model is adopted by Cognism. Limited Company.
- Worked on the Company Hierarchy Project: Proposed new algorithm that converts information like employee to numerical nodes for future comparison and prediction. Improved efficiency and stability of algorithm. Used a combination of traditional machine-learning algorithms, Numpy tricks and debugging skills.

Projects

URAD Jan 2021 - Aug 2021

- Cofounded a technology project that provides C2C service to students during their college application season: Responsible for the technology development team includes frontend, Databases and Algorithms. Developed a stable and efficient Wechat mini-app.

UPE | April Fools Chatting Slackbot Team Leader Feb 2021 – May 2021

- Worked as team lead on the April Fools Chatting Bot project within UPE(CS Honor Society): Used Transformers to experiment with latest models such as GPT-2, Bert, Albert to complete NLP task. Re-trained models with self-designed tokens and training samples to give personality to the bot. The bot is capable of communication, Q&A and translation.

SKILLS, CERTIFICATIONS & OTHERS

- Skills**:** Word, Excel, PowerPoint, Python, SQL, JAVA, R, Matlab, CSS, HTML, XML, Pytorch