Dalin (Darlene) Guo

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Education

University of California San Diego — **La Jolla, CA**
Ph.D. Candidate in Cognitive Science — Sept., 2018 - Sept., 2021
Ph.D. Student in Electrical and Computer Engineering — Sept., 2016 - July, 2018

University of California San Diego — **La Jolla, CA**
M.S. in Intelligent System, Robotics and Control, ECE, GPA: 3.9/4.0 — Sept., 2016 - June, 2018

University of California San Diego — **La Jolla, CA**
Exchange Student, EECS, GPA: 3.9/4.0 — Sept., 2015 - Mar., 2016

Beijing Institute of Technology — **Beijing, China**
B.S. in Signal and Image Processing, Electrical Engineering, GPA: 90/100 — Sept., 2012 - June, 2016

Skills

Python, TensorFlow, GCP, SQL, HTML, Javascript, Scala, Java, C++, php, Git, LaTeX
Machine Learning, Reinforcement Learning, Bayesian Methods, Statistics, Probability Theory

Industry Experience

Twitter, Cortex Applied Machine Learning, Recommender System team — **London, UK**
Machine Learning Engineer II — Oct., 2021 - Now
- Built a reinforcement learning model to optimize for long-term value for notifications
- Built a supervised learning model to predict long-term engagement for notifications
- Built a multi-task ranking model for different user types for notifications
- Built a two-tower model for candidate generation for notifications

Facebook, Feed and Story Content Recommendation team — **Menlo Park, CA**
Software Engineer Intern, Machine Learning — July, 2020 - Sept., 2020
- Implemented a backend service to recommend exploratory items based on pair-wise similarity models
- Analyzed offline model performance and online AB test results qualitatively & quantitatively
- Built a web demo tool to display exploratory items for offline model analysis

Twitter, Cortex Applied Machine Learning team — **London, UK**
Machine Learning Researcher Intern — June, 2019 - Sept., 2019
- Simulated multiple deep reinforcement learning algorithms of contextual bandits for ads display
- implemented the best model, which also achieved a better performance in online AB test (RecSys 20)

IBM China Development Lab, PureApplication team — **Beijing, China**
Technical Intern — May, 2016 - Aug., 2016
- Set up environment and installed software products on multiple virtual servers based on Ansible
- Built a mock server for software development testing based on IBM Rational Integration Tester

Selected Publications

O'Brien C , Wu H, Zhai S, **Guo, D**, Shi W, Hunt JJ (2022). Should I send this notification? Optimizing push notifications decision making by modeling the future. *Preprint.*

Guo, D, Ktena, S, Myana, P, Huszar, F, Kneier, M, Das, S, Shi, W, Tejani, A (2020). Deep Bayesian Bandits: Exploring in Online Personalized Recommendations. *RecSys. (acceptance rate: 20%)*

Guo, D, Yu, AJ (2018). Why so gloomy? A Bayesian explanation of human pessimism bias in the multi-armed bandit task. *NeurIPS. (acceptance rate: 20%, scores: 8, 8, 7)*

Research Experience

Computational & Cognitive Neuroscience Lab, UC San Diego — **La Jolla, CA**
Graduate Student Researcher, Advisor: Angela J. Yu — Sept., 2016 - Sept., 2021
Bayesian predictive modeling of human learning and decision-making in multi-armed bandit tasks
- Identified different uncertainty-driven computational factors for human exploratory behaviors
- Disentangled reward and uncertainty to understand humans' efficient exploration strategy
- Recovered and explained human irrationality of a low prior reward expectation (NeurIPS 18)
- Compared human decision-making vs. various reinforcement learning models
- Investigated impaired decision-making process of depressed population via modeling

Center for functional MRI, UC San Diego — **La Jolla, CA**
Undergraduate Research Intern, Advisor: Thomas T. Liu — July, 2015 - Mar., 2016
- Experimented various motion correction techniques in a fMRI pre-processing pipeline
- Performed resting-state fMRI connectivity analysis within and across subjects