Kexin Chen

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Education

University of California, Irvine — Irvine, CA

PhD, Cognitive Neuroscience — 2018 - 2023

University of California, San Diego — San Diego, CA

BS, Cognitive Science - Computation. Minor: Mathematics (Cum Laude) — 2014 - 2017

Relevant Experience

Machine Learning Internship — June 2021 - Sept 2021

Facebook, Inc. — Remote, CA

- Conducted a comprehensive feature analysis that informed an effective feature roadmap and performed feature selection for a production model which led to significant improvements in model performance
- Designed and conducted online A/B Testing experiments and analyzed the online revenue gain, which informed the decision of launching the ranking model I developed
- Adapted a Multi-Task-Multi-Label network architecture to leverage more labeled data and avoid label sparsity
- Incorporated a wide component into the deep neural network to capture implicit correlations between features

Graduate Researcher — Sept 2018 - present

Cognitive Anteater Robotics Laboratory, UC Irvine — Irvine, CA

- Designed and implemented neural network models for visual motion perception and navigation based on inspirations from the brain
- Designed experiments to test the robustness of the model and conducted statistical analysis of the results to compare with empirical data
- Maintained an open source spiking neural network simulator developed with C++ and CUDA
- Collaborated in a multi-functional group and integrated cross-disciplinary approaches to answer research questions

Deep Learning Engineer — Sept 2017 - Aug 2018

DeepRadiology Inc. — Santa Monica, CA

- Focused on a deep learning computer vision project where our team developed deep convolutional neural networks to analyze medical images such as X-ray or CT scans.
- Integrated an image classification module to our existing pipeline for deep neural network training
- Evaluated the added module against our existing implementation with quantitative methods
- Created a label sorting method to automatically resolve conflicts in the data labels cause by human mistakes

Projects

Text Analysis on Presidential Tweets — Jul 2017 - Sept 2017

Department of Political Science, UC San Diego — San Diego, CA

- Utilized machine learning techniques to extract political information from 150,000 Tweets of presidential candidates in 2016
- Applied data cleansing techniques on Tweets crawled from the web and converted text to word vectors
- Adapted machine learning algorithms such as SVM and RandomForest to classify Tweets and conducted sentiment analysis

Data Analysis and Visualization on Neural Data — Apr 2017 - Sept 2017

Systems Neuroscience Lab, UC San Diego — San Diego, CA

- Researched on machine learning technique and quantitative methods to analyze high-dimensional neural data
- Applied a non-parametric feature space analysis technique that was not applied to neural data before to find activity patterns in the data
- Led the data analysis portion of the project and initiated iterations of the analysis to improve the results

Technical Skillset

Languages: Python, C++, Java, SQL, MATLAB, R

Technologies: TensorFlow, MXNet, R, Docker, Kubernetes, Unix/Linux, Git, numpy, scipy, matplotlib, scikit-learn, pandas

Publications

- **Chen K**, Johnson A, Scott, EO, Zou X, De Jong KA, Nitz DA, Krichmar JL (2021). *Differential Spatial Representations in Hippocampal CA1 and Subiculum Emerge in Evolved Spiking Neural Networks.* IJCNN 2021.
- Xing J, Nagata T, **Chen K**, Zou X, Neftci E, Krichmar, JL. (2021) *Domain Adaptation In Reinforcement Learning Via Latent Unified State Representation.* AAAI 2021.
- **Chen K**, Hwu T, Kashyap HJ, Krichmar JL, Stewart K, Xing J and Zou X (2020) *Neurorobots as a Means Toward Neuroethology and Explainable AI.* Front. Neurorobot. 14:570308. doi: 10.3389/fnbot.2020.570308

Additional Experience

Teaching Assistant Department of Cognitive Sciences, Irvine
Irvine, CA Sept 2018 - present

- Led lab sections for a robotics class with 100 students every week
- Managed student group projects and provided guidance to help students realize project ideas with codes
- Assisted in designing course projects that had real-world applications and also provided good metrics in assessing students' knowledge of course materials