

Chunji Wang

chunjiw@gmail.com, github.com/chunjiw

Los Angeles, CA

(213) 344-7935

EDUCATION

- **University of Southern California** *Ph.D. in Neuroscience* Los Angeles, CA, 2011/07 – 2017/08
- **Tsinghua University** *B.S. in Physics* Beijing, China, 2007/07 – 2011/07

SKILLS

- **Theories:** Machine Learning, Natural Language Processing (NLP), Deep Learning, Statistics
- **Languages:** Python, R, C, Scala, Matlab, SQL, Java, Mathematica
- **Technologies:** Git, MySQL, Spark, AWS-EMR, Linux, Shiny, Kinect

WORK EXPERIENCE

- **Samsung Semiconductor, Inc.** *Sr. Imaging Software Engineer* Pasadena, CA, 2018/9 – present
 - **3D Image Sensor:** Developing 3D image sensor, focusing on image signal streaming and processing algorithms in python and C.
 - **Object Recognition:** Developing built-in object recognition via Convolutional Neural Network (CNN) in python and C.
- **Rule14 LLC** *Data Scientist* Santa Monica, CA, 2017/10 – 2018/9
 - **Utility Load Forecast:** Built utility load forecast models for millions of customers; integrated it with relational databases; automated back-end model training and testing.
 - **Customer Churn Prediction:** Built Gradient Boosted Trees to predict churn probabilities of millions of customers via xgboost. Achieved a lift of 5.
- **Innovation Solutions** *Data Scientist Intern* Santa Ana, CA, 2015/06 – 2016/05
 - **Summary:** Developed applications to record, analyze and report human movement kinematics and performance during Kinect video games and exercises.
 - **Data Acquisition:** Implemented a body recorder application to acquire Kinect skeleton data and smooth it with an Unscented Kalman Filter (Matlab & C#), which reduced signal noise by $\sim 90\%$.
 - **Data Analysis:** Implemented an application to calculate human anatomical joint angles from Kinect skeleton data (Matlab & C#), allowing further analysis of human movement patterns in anatomical terms.
 - **Report and Visualization:** Designed and implemented a web application to report full kinematics performance history to users and physical therapists (R, Shiny & SQL) with intuitive graphics.

DATA SCIENCE PROJECTS

- **Word Prediction:** Developed the application `wordpred` to predict the most likely following word in real time while a user is typing. Tokenized 2GB text data to train an ngram model. Deployed via the Shiny framework.
- **Topic Modeling:** Grouped unlabeled textual documents and inferred latent semantic structures via Python. Extracted features by Term Frequency - Inverse Document Frequency (TF-IDF). Trained K-means and Latent Dirichlet Allocation(LDA) models. Identified latent topics and keywords of each document for clustering and calculated document similarity. Visualized results by Principal Component Analysis (PCA).

PUBLICATIONS

- Wang C et al. Spin-orbit coupled spinor Bose-Einstein condensates. *Physical Review Letters*. 105.16 (2010): 160403.
- Wang C et al. The duration of reaching movement is longer than predicted by minimum variance. *Journal of Neurophysiology*. 116.5 (2016): 2342-2345
- Schweighofer N, Wang C et al. Dissociating motor learning from recovery in exoskeleton training post-stroke. *Journal of NeuroEngineering and Rehabilitation*. 15.1 (2018): 89.
- Martinez C, Wang C. Structural constraints on learning in the Neural Network. *Journal of Neurophysiology*. 114.5 (2015): 2555-2557