Eric Kaiyuan Chen

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Education

- **University of California, Los Angeles** — Los Angeles, CA
  Bachelor of Engineering in ***Computer Science*** — *July 2016 – June 2020*
  Minor in ***Mathematics***
  GPA: ***3.95****/4.0* *Major GPA* ***4.0****/4.0*

Courses: CS 111 Operating System, 146 Machine Learning, Math 131AH Honor Analysis, 115AH Honor Linear Algebra

Work Experience

- **BoTech**
  Software Engineer Intern — *Nov 2017 - Jan 2018*
  - **Police Body Camera Management Software**: Designed and built software for workstations to manage police body cameras. This project will be certified by Ministry of Public Security of China and applied to all police body cameras in my city. I designed and implemented a **unified workstation interface** to initialize, setup, backup, modify all police body cameras and to coordinate with centralized storage database.

- **Siemens Ltd**
  Research Assistant Intern — *May 2017 - Sept 2017*
  - **Novelty detection**: Did research on novelty detection of time-series data. As traditional methods usually come with long training time and difficulty in real-time implementations, we built a **dynamic Bayesian machine** by Expectation-Maximization algorithm. Given **high dimensional time-series data**, I wrote a python script that calculates probability conditioned on correlated variables and gives p-score on corresponding probability.
  - **Time-series Correlation and Clustering**: Did research on correlation between different dimensions of time-series and associated p-value, then used agglomerating tree to cluster similar time-series data.

Published Works

[1] Wenchao Wu, Yixian Zheng, **Kaiyuan Chen**, Xiangyu Wang, and Nan Cao. "A Visual Analytics Approach for Equipment Condition Monitoring in Smart Factories of Process Industry". In: *IEEE PacificVis Conference*. Kobe, Japan, Apr. 2018.

[2] **Kaiyuan Chen** and Benqiang Wang. "High-resolution Omnipotent Video Codec". ZL 2015 2 0197947.6. July 2015.

Honors and Awards

Highest Distinction of International Euclid Mathematics Contest
Bronze Medal of "Cup of Hope" National Mathematics Invitational Tournament

Projects

- **LTE Cross Layer Analysis and Mobile Insight** — *Spring 2018*
  This is a project that I work on in UCLA Wireless Network Group. Working on Android application Mobile Insight, I wrote scripts to analyze packet dependency between LTE PDCP, RLC and MAC layer. By my analyzers, one can get a comprehensive breakdown on latency, throughput and packet loss of each layer.

- **Deep CNN for MRI Skull Stripping** — *Winter 2018*
  I designed a **deep CNN model** that preprocesses MRI images by removing the skulls and leaving the brain tissue unchanged. This model is similar to autoencoder's encoder-decoder approach, but I redefined loss function to make it work in this case. I also implemented other machine learning baseline models like random forest, SVM and logistic regression and did series of experiments comparing these models.

- **LSTMxWave** — *Winter 2018*
  LSTMxWave is a **machine learning** project that explores the usage of LSTM/RNN to process time-series data such as sound waves. As an autoencoder based on LSTM neural network, it can predict, reconstruct and detect novelty data points from waves.

- **ClassUCLA** — *Since Fall 2017*
  ClassUCLA runs on a server to automatically check for open seats of classes in UCLA. It notifies users by SMS once the class is available or user's requirement is satisfied. It has a full functioning server-side database and handles interactions by Twilio. It is now used by 400+ users every quarter and this number is still growing.