


Audrey Der

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 ader003

EDUCATION

University of California, Riverside

Ph.D. in Computer Science

Advisors: Eamonn Keogh, Evangelos Papalexakis

Riverside, CA

September 2019 - June 2024

University of California, Riverside

B.S. in Computer Science

Riverside, CA

September 2015 - June 2019

AWARDS

Dean's Distinguished Fellowship Award

University of California, Riverside

February 2019

PROJECTS

Password Cracking

January 2019

- MD5 password cracking; done in C++.
- Method Design: Divided up the permutation space into tenths, a weighted number of threads on each partition.
- Cracked in eight minutes on 32 threads, AMD Threadripper 2950x @ 4 GHz.
- Throughput: 3977.56 passwords/second.

HashStagram

October 2018

- A four person Machine Learning project created for SD Hacks 2018.
- Inspired by and using Park et al.'s HARRISON dataset, linked here. The GitHub repository can be found at this link.
- Upon uploading a hypothetical picture to our website (supported for the duration of the event), generate the five most likely hashtags based on current tagging trends (current as per the dataset) picture might be tagged with.
- Using PyTorch and Google Cloud Platform, we explored models using AlexNet, ResNet, and VGG-16.

Hit Song Science

April 2018 - June 2018

- A research-based project in CS235 (graduate level): Data Mining Techniques.
- Predicts if a song will be popular depending on its acoustic similarity to other songs.
- Utilizes the Matrix Profile. (This is the link to the UCR Matrix Profile Page).
- Benchmarks: Random Forest (Tensorflow), and SVM and DNN (scikit-learn).
- Data used: integrated The Million Song dataset and that acquired from the Spotify API.
- Translated the Matrix Profile MATLAB script to Python and wrote other assorted scripts to massage the data to suit our needs.

WORK EXPERIENCE

University of California, Riverside

Undergraduate Research Assistant

Riverside, CA

January 2018 - September 2019

- Data sampling and using predictive models to explore the viability of research ideas.
- Data preprocessing for multiple grad students and their research.
- Built a tool whose input is a directory of CSVs and outputs plotted time series based on user specified criteria.
- Built a MATLAB GUI for a grad student that loads (or draws in the GUI) a time series data query and runs Mueen's Algorithm for Similarity Search (MASS), given some time series data, and displays the output.

SKILLS, FAMILIARITIES, AND ORGANIZATIONS

- LANGUAGES: Python, C++, MATLAB, C, Java, Bash
- LIBRARIES AND FAMILIARITIES: Pandas, NumPy, SciPy, scikit-learn, PyTorch, SQL, Tensorflow, Apache Spark, Web Scraping, Apache Lucene
- OTHER TOOLS: \LaTeX , Jupyter, Git
- ORGANIZATIONS AND ACTIVITIES:
 - Association of Computing Machinery (ACM), ACM-W, Cyber@UCR
 - Citrus Hack Organization Committee (February 2016 - December 2017): **Director of Marketing, Director of Operations**, ASME (April 2016 - April 2017): **Professional Development Chair**