EUNJEONG JOSHEPHINE LEE

Raleigh, NC 27613 | Phone:919-916-7239 | Email: ejlee127@gmail.com
Homepage: https://ejlee127.github.io
LinkedIn: https://www.linkedin.com/in/ejlee127
GitHub: https://github.com/ejlee127

SUMMARY

Creative, rigorous and systematic data analyst with skills in Python, SQL, JavaScript, Flask API and Machine Learning. Earned a certificate in Data Analytics and Visualization from BootCamp of UNC at Chapel Hill, NC. 10+ years of research experience in number theory and cryptography with Ph.D degree in mathematics. Strengths including problem solving abilities combined with collaborating across diverse groups. Enthusiastic for learning novel areas, searching for the hidden skeleton of data and exploring the various ways to find simple and clear solutions.

TECHNICAL SKILLS

Languages: Python, C. JavaScript, Html, CSS, VBA
Tools: Flask API, Spark, Tensorflow, Sklearn
Databases: SQL, MongoDB
Visualization: Tableau, D3, Plotly, ChartJS
Mathematics: Magma, Maple, Sage, Latex
Cryptography: PKI, Elliptic Curve Cryptosystem, Pairing-based Cryptosystem, SHA, MD5

PROJECTS

Urban Sound Classification using Machine Learning:
Github link: https://github.com/ejlee127/UrbanSoundClassificationUsingML
Deployed page: https://ejlee127.github.io/UrbanSoundML

- This project finds a model to classify the 10 types of sounds using the UrbanSound8K dataset and machine learning algorithms. By researching the best way of extracting sound features and avoiding overfitting in the training process, we carry out the experiments with various machine learning algorithms and then analyze their classification accuracies.
- My role was creating the codes for data processing, which extracts the features from audio files to construct samples for machine learning algorithms. In addition, storing the samples in in AWS-RDS(PostgresSQL), creating codes for machine learning process and analyzing the experiment results and making the project page to provide a detailed explanation of what we've done.
- Tools: Python (Colab notebook, jupyter notebook), Matplotlib, Spark, Sklearn, Tensorflow, SQL, AWS S3 and RDS

NC-County Statistics:
Github link: https://github.com/georgealym/project-one
Deployed page: https://quiet-peak-17157.herokuapp.com/

- This project develops a consolidated dashboard of NC county employment statistics for multiple years for each county.

- My role was collecting data from census.gov using API calls, cleaning the data, and developing Flask APIs to retrieve the data. Also, using ChartJS library, I created javascript codes to represent the bar and line charts.
- Tools: Python, Flask API, MongoDB, JavaScript, Bootstrap, D3, Leaflet, CSS, ChartJS

Soccer Home Advantage Analysis | Github link: https://github.com/georgealym/project-one

- This project reviews the international soccer data in the European league to check the common assumption-home team has advantage is real.
- My role was collecting attendance data (csv, api), creating python codes for data cleaning and analyzing the relation between the attendance and the scores.
- Tools: Python, Matplotlib, JSON

EXPERIENCE

Visiting Scholar 2014 – 2015
Dept. of Mathematics, NCSU **Raleigh, NC**

- Performed joint research on number theory problems with Professor Hoon Hong.
- Served as an external member on a doctoral dissertation committee for two doctoral candidates
- Tools : Maple (algebraic mathematical package), Latex.

Key Accomplishments:

- 2 technical reports and one article, submitted to Journal of Number Theory

Research Professor 2010 – 2014
Ewha Institute of Mathematical Sciences **Seoul, South Korea**

- Led the research projects about Algorithms in Cryptography.
- Taught the classes on cryptography for undergraduate and graduate students.
- Served as a referee for the publications of research articles submitted to AsiaCrypt, ICISC, SCN, Systems & Software, and Human Tech Thesis Prize, etc.

Key Accomplishments:

- 7+ peer reviewed paper publications in number theory and cryptography journals such as Finite Fields and Their Applications, Journal of Number Theory and Design, Codes and Cryptography
- PI of the grant - Basic Science Research Program (2011-2014)

EDUCATION

Data Analytics and Visualization Certificate: BootCamp of University of North Carolina at ChapelHill
A 24-week intensive program focused on gaining technical programming skills in Excel, VBA, Python, R, JavaScript, SQL Databases, Tableau, Big Data, and Machine Learning.

Ph.D in Mathematics: POSTECH, South Korea majored in Cryptography

Dissertation: Computation of Tate pairing on hyperelliptic curves and its applications - developing algorithms for the efficient Tate pairing-based cryptosystem, proposing a key agreement protocol as an application, and analyzing the efficiency by implementing the algorithms in C