Jungmin (Min) Kim

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ACADEMICS

Columbia University (2020~Present, C. P. Davis Scholar) | Expected Graduation: May, 2024

- B.S. in Computer Science, GPA: 3.82
- **Relevant Coursework:** Machine Learning, Natural Language Processing, First Principles of Computer Vision, Deep Learning in Computer Vision, Pixel Processing, Machine Learning for Functional Genomics, Artificial Intelligence, 3D User Interface & Augmented Reality, Data Structures, Fundamentals of Computer Systems, Linear Algebra, Number Theory & Cryptography

SKILLS

- **Languages:** Python, C, C++, C#, Java, SQL, Swift, R, HTML&CSS, Javascript
- **Tools:** Django, Tensorflow, Pytorch, Keras, Numpy, Pandas, OpenCV, WordNet, BERT, Matplotlib, Scikit-image, Unity, Unreal Engine, Git, Fusion360

PASSION PROJECTS

Personal Website: https://jk4449.github.io/portfolio/

Gesture-based Real-time BlackJack Interface: Full-stack Web Development

- Pioneered the development of a real-time visual interface in **Python** using **OpenCV** where the user can play a game of BlackJack using hand gestures.
- Achieved **recall of 0.84** through utilizing thresholding and contouring to identify static and dynamic gestures.
- Improved recall by **33%** by facilitating user testing and incorporated feedback to fine-tune thresholds.
- Transformed the project into a Web Application by reimplementing using **Django** and **HTML/CSS**.

Hunt & Harvest: VR Game Development using Unity

- Lead a team of 4 developers in developing a game to hunt and harvest with tools with **Unity** and **git**.
- Achieved constant workload throughout the project timeline while being on schedule by creating a clear roadmap in the start and leading weekly meetings to set the specific goals for the following week.
- Completed the project on schedule by helping others in resolving overdue items, bug fixes, and **resolving 5+ major merge conflicts** by deciphering .unity files and locating the point of conflict.
- Oversaw codebase organization by reviewing pull requests and standardizing coding style.
- Developed user-friendly features by enabling quick and intuitive mini-map access, tool-selection and tranquilizer.

iNAP: Multi-class Classification of a Protein Sequence Using BiLSTM-CNN

- Co-developed the model iNAP using **TensorFlow** that predicts a protein's binding property given its sequence.
- Achieved high Area under the ROC Curve (AUC) score of **0.92**, outperforming existing models, by implementing a multi-class classification approach and training a total of 314,204 parameters using cross validation.
- Improved results and shortened training time by implementing **ProtBERT**'s tokenization function to encode the protein sequence, and using appropriate truncation/padding.

NLP Model Implementations

- Trigram Model: Classified between human written text and GPT generated text with an **accuracy of 0.94**.
- Lexical Substitution using **WordNet**: Implemented the **Simple Lesk Algorithm** and used **word2vec** encoding.
- Dependency Parsing NN: Implemented **Dependency Parsing algorithm** and trained a **Neural Network** using **Keras** based on the parser's results to predict the dependency structure of an unlabeled sentence.

WORK EXPERIENCE

Alignment Growth Management | 2023. 06-07. Summer Analyst.

- Influenced the firm's vision by interviewing 15+ executives/experts in the Media and Entertainment industry and presenting to the firm on AI's future impact on the gaming and TV/film industry.
- Enabled faster and productive communication between the firm and the client by translating complex investment structures to easy-to-understand flow charts.

VIP Research & Management | 2020. 06-10. Summer Researcher.

- Influenced the fund's portfolio by writing 4 full reports (10,000+ words) and 2 half reports on companies in the live events, streaming, software, and space industry, which became a template for future reports used by the team.