Jacob Lee

Union City, NJ | 347-263-9968 | hl2278@cornell.edu

Education

Graduate Center, City University of New York - New York, NY   Jan 2021 - Present
Master of Science in Data Science

Cornell Tech, Cornell University - New York, NY   Aug 2017 - May 2018
Master of Engineering in Computer Science

Baruch College, City University of New York - New York, NY   Aug 2012 - May 2016
Bachelor of Arts in Mathematics; Minor in Law and Policy; Cum Laude

Publications

Hyun Gi Lee, Evan Sholle, Ashley Beecy, Subhi Al'Aref, and Yifan Peng. 2021. **Leveraging Deep Representations of Radiology Reports in Survival Analysis for Predicting Heart Failure Patient Mortality**. *In Proceedings of NAACL-HLT*. [[pdf](#)]

Emily Tseng and **Hyun Gi Lee**. 2018. **A combined rule-based and statistical approach to family history extraction from unstructured text**. *In Proceedings of BioCreative/OHNLP Challenge, ACM-BCB*. [[pdf](#)]

Experience

BioNLP Lab, Weill Cornell - Research Assistant   Jul 2020 - May 2021
- Improved all-cause mortality survival predictions with proportional hazards models by 5.7% on average in C-index and time-dependent AUC by utilizing BERT-based hidden features from 40K CT reports of 12K heart failure patients.
- Implemented a preprocessing module to extract disease entities and linguistic features from radiology reports with CheXbert and spaCy for knowledge graph construction.
- Share experiment results, present related papers, and set development plans in weekly meetings.

Telescope (Pivoted) - Co-founder   May 2019 - Dec 2020
- Designed and developed a search engine with 1.5K YTD users for finding public companies based on specifications such as product/service offerings with Django, Bootstrap, and PostgreSQL. [[link](#)]
- Implemented an algorithm for detecting top daily company-specific news by aggregating and analyzing articles from multiple media sources with tools such as IEX Cloud API and TextRank.
- Conduct user research and manage product development cycles for feature implementations and bug fixes.

\Art Fellowship, Cornell Tech - Research Fellow   May 2018 - Aug 2019
- Collaborated with artist Mika Tajima and Brooklyn Research on a kinetic sculpture made with 1600 electromagnets in a 50"x50" grid, ferrofluid, and Navier-Stokes-based fluid control software for the public exhibition at Okayama Art Summit 2019. [[link](#)]
- Experimented with machine learning methods such as t-SNE and GANs to develop a visualization pipeline for the sculpture.
- Developed a hardware testing program with Processing and conducted reliability tests.

Skills

- **Software Development**: Python, Javascript, C++, Swift, HTML/CSS, Django, PostgreSQL, Numpy, Pandas, Tensorflow, PyTorch, Keras, scikit-learn, NLTK, spaCy, Bash, Git, Amazon Web Services, full-stack development, agile development
- **Language**: English (fluent), Korean (native)
- **Extracurricular**: 2019 Chicago Marathon and 2018 Philadelphia Marathon finisher