Namu Park

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Research Interests

- **Natural Language Processing**: NLP for Clinical Informatics (Narrative Patient Reports, Electronic Health Records), Distributed Representation, Machine Translation
- **Machine Learning**: Artificial Intelligence, Machine Learning for Electronic Health Records, Representation Learning (Triplet Network), Unsupervised Learning
- **Data Science**: Medical Data Science, Social Text Mining, Information Retrieval

Education

Yonsei University, Seoul, South Korea (CGPA: 3.98/4.00)

- M.S. in Digital Analytics (2020), advised by Professor Min Song
  Master's thesis: **Information Extraction from Unstructured Medical Text using Pseudo-label-based Semi-supervised Learning**

Sogang University, Seoul, South Korea (CGPA: 3.59/4.00, Triple major, $Magna\ Cum\ Laude$)

- B.S. in Convergence Software (2019)
- B.E. in Economics (2019)
- B.A. in French Language and Culture (2019)

Courses related to Research Interests:

Computer Science	Data Science	Math / Statistics / Analytics
- Data Structures†	- Machine Learning††	- Linear Algebra†
- Python†	- Database Management††	- College Mathematics†
- Java Programming†	- Text Mining††	- Economic Statistics†
- C Programming†	- Data Mining††	- Econometrics†
- Operating Systems†	- Big Data Parallel Processing††	- Mathematical Economics†
- Algorithms†	- Artificial Intelligence and Deep Learning††	- Basics of Big Data Analytics††
- Database Systems†	- Advanced Machine Learning††	- Big Data Statistical Analytics††
- Capstone Design†	- Natural Language Processing and Deep Learning††	- Practical Big Data Analytics††

† : Undergraduate, †† : Graduate

Research Experience

Researcher, *Asan Medical Center* **September 2020 – Present**

- **A**dvised by Professor Chang-Min Choi, *Department of Pulmonology and Critical Care Medicine, Asan Medical Center, University of Ulsan, College of Medicine*
- "Prediction of Septicemia using Time Series Analysis"
- "Information Retrieval in Narrative Patient Records related to Lung Cancer Staging using Natural Language Processing"

Research Assistant, *Deep Text Lab., Yonsei University* **March 2019 – August 2020**

- **A**dvised by Professor Min Song, *Department of Library and Information Science, Yonsei University*
- "Consensus Analysis of Drug Repurposing Literatures for COVID-19" with Professor Ying Ding,

School of Information, University of Texas, Austin

- "Automatic Translation of Affiliations and Author Names in Research Papers using Attention and Long-Short Term Memory" with *Yonsei College of Medicine*
- "Violent Language Detection through Unstructured Big Data Analysis and NLP"
- "Text-mining based Consumer Analysis on Foldable Phones focusing on Galaxy Fold"
- "Sentimental Analysis of Cyber Campus data, focused on Group Assignment" with *Teaching and Learning Innovation Center, Yonsei University*
- "A Curation System for Academic Papers using Paper2vec and BERT embeddings"

Research Assistant, *Soft Computing Lab., Yonsei University* **August 2019 – March 2020**

- Advised by Professor Sung-Bae Cho, *Department of Computer Science, Yonsei University*
- "Deep Learning-based Gear Noise Classification" with *Hyundai Mobis* (*Hyundai Motor Group*)
- "Poisonous Clause Detection using Word Embedding and Sentence Similarity" with *Samsung Engineering* (*Samsung*)"
- "Rule-based Semantic Graph Analysis using Chat Log" with *Electronics and Telecommunication Research Institute, Republic of Korea*

Big Data X Campus **June 2018 – September 2018**

- Research oriented data science summer school, participation funded by *Government of the Republic of Korea*
- Learned basic machine learning and deep learning theories
- Practical programming exercise using Python, Tensorflow, Apache Spark, Hadoop framework
- "Deep Learning-based Bloodless Disease prediction"
- "Improving Leisure and Culture via Shopping Complex Analysis"

Teaching Experience

Lecturer, *Korea Industrial Technology Association* **October 2019**

- Python tutorial on deep learning using Tensorflow, Keras
- Lecture in basic theory of Recurrent Neural Network and Long-Short Term Memory
- Instructed hands-on project on text generation using Wikipedia dataset

Teaching Assistant, *Yonsei University* **Spring 2019**

- Course: Database Management
- Helped students having difficulties in database theories
- Prepared tutorials to instruct the application of various SQL queries in MySQL
- Special lecture on basic and advanced SQL queries
- Special lecture on basic database management theory focused on Relational Database

Teaching Assistant, *Yonsei University* **Spring 2019**

- Course: Big Data and Knowledge Discovery
- Provided supplementary information on big data theory
- Proctored 5 quizzes on data warehouse and big data application

Publications

- **Prediction of Lung Cancer TNM Staging in PET-CT Clinical Notes**
  Namu Park, Hyung-Jun Park, Chang-Min Choi, Min Song (in preparation)
- **Are we there yet? Analyzing scientific research related to COVID-19 drug repurposing**
  Namu Park, Hyeyoung Ryu, Ying Ding, Qi Yu, Yi Bu, Qi Wang, Jeremy J. Yang, Min Song. *Scientometrics* (under review)

- **Analyzing knowledge entities about COVID-19 using entitymetrics**
  Qi Yu, Qi Wang, Yafei Zhang, Chongyan Chen, Hyeyoung Ryu, Namu Park, ... , Yi Bu.
  Journal of the Association for Information Science and Technology (under review)
- **A Monte Carlo Search-based Triplet Sampling Method for Learning Disentangled Representation of Impulsive Noise on Steering Gear**
  Seok-Jun Bu, Namu Park, Gue-Hwan Nam, Jae-Yong Seo, Sung-Bae Cho.
  IEEE, International Conference on Acoustics Speech and Signal Processing, 2020.
  (Virtual Presentation Speaker)
- **Data Augmentation using Empirical Mode Decomposition on Neural Networks to Classify Impact Noise in Vehicle**
  Gue-Hwan Nam, Seok-Jun Bu, Namu Park, Jae-Yong Seo, Hyeon-Cheol Jo, Won-Tae Jeong.
  IEEE, *International Conference on Acoustics Speech and Signal Processing, 2020*.
- **Classifying Impact Noise in Car Steering Gear using Mel-spectrogram based Convolutional-Recurrent Neural Network**
  Namu Park, Seok-Jun Bu, Sung-Bae Cho.
  Korea Software Congress, 2019.

Skills and Certificates

Skills

- Python programming (expert), C programming (intermediate), Java (intermediate)
- Tensorflow, Keras (expert)
- SQL (Structured Query Language) using MariaDB, Oracle SQL
- Big Data Analytics (Hadoop/Spark), Data Visualization
- Google Firebase, Android Studio, Django, HTML

Certificates

- Excellence Award by commissioner of the *Seoul Metropolitan Police Agency* for performing CPR and saving life of a pedestrian
- SCSC (Samsung Convergence Software Course) certificate
- Big Data X Campus certificate

Scholarships

- Yonsei Digital Analytics Teacher Assistant Scholarship (2019, 2020)
- Higher Education Innovation Team Social Innovation Activity Scholarship (2019)
- Samsung Convergence Software Course Scholarship - **Academic Excellence** (2018)
- Sogang Honors Scholarship - **Academic Excellence** (2017)
- Government Funding Scholarship (2016)
- Sogang SALANG Scholarship (2013, 2016, 2017, 2018)

Other Information

- Served as Tourist Police for 21 months (Military Service)
  - Military duty as auxiliary police (interpretation, maintenance of public security)
  - Participated in 2015 Gwangju Summer Universiade as interpreter
- Member of Sogang University Basketball Team
  - Varsity basketball player of Sogang University at Sogang-Sophia Festival of Exchange (2017)
  - 2nd place in Kyonggi University Basketball Tournament
- Lived 2 years in Montreal, Canada (2004 – 2006), 2 years in Paris, France (1997 – 1999)