Heesung Lee

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INTERESTS

Atypical Business Data Mining, Natural Language Processing, Sustainable Business, ESG, Social Finance

EDUCATION

Kyung Hee University | *Mar. 2014 ~ Present*
Undergraduate Student | *Seoul, Korea*

- ♦ Bachelor's Degree in Business Management
- ♦ Expected Graduation Date: First half of 2020

Whimoon High School | *Mar. 2009 ~ Feb. 2012*
High School Diploma | *Seoul, Korea*

PUBLICATION, RESEARCH, & COURSEWORK

Kyung Hee University Center for Advanced Information Technology | *Spring 2014 ~ Present*
Researcher (Advisor: Prof. Ohbyung Kwon)

Investigating the Impact of Corporate Social Responsibility on Firm's Short- and Long-Term Performance with Online Text Analytics | *Spring 2015 ~ Fall 2016*
First Author | *Seoul, Korea*

- ‣ **ABSTRACT (Excerpt)**
  Keywords related to CSR are extracted from atypical sources, such as newspapers, using text mining techniques to examine the relationship between CSR and firm performance (Lee et al., 2016).
- ‣ **PUBLICATION**
  Lee, Heesung & Jin, Yunseon & Kwon, Ohbyung. (2016). Investigating the Impact of Corporate Social Responsibility on Firm's Short- and Long-Term Performance with Online Text Analytics. Journal of Intelligence and Information Systems. 22. 13-31. 10.13088/jiis.2016.22.2.013.

Working Paper: Near Real-time Prediction of Cryptocurrency Price Trend Using Extended Sentiment Analysis and Deep Learning | *Summer 2019 ~ Present*
First Author | *Seoul, Korea*

- ‣ The speculative characteristic of cryptocurrency requires quick and accurate forecasting of price fluctuation.
- ‣ Suggested a sentiment analysis and deep learning (weighted Leaky ReLU, ensemble method including GAN, etc.) mechanism using topic-classified (LDA) streaming text sources and minute-based currency price for accurate prediction.
- ‣ The method developed in this study showed a 72.6% hit rate in predicting price direction.
- ‣ This work was launched and funded by the Ministry of Education of the Republic of Korea and the National Research Foundation of Korea (NRF-2017S1A3A2066740).
- ‣ **Service to be officially launched in 2020 in *Cointelegraph Korea***

Working Paper: A Study on the Relationship between the Value of Firm and Gapjil (갑질)

Summer 2018 ~ Present
Seoul, Korea

Co-Author
  ‣ **ABSTRACT (Excerpt)**
    The research has analyzed the impact of corrupt corporate practices. Different variables were set to analyze the issue more efficiently - the number of articles as a proxy variable (PV) of controversial issues with Tobin's Q (MB, ROE, OIS) as PV of enterprise value. Also, the company's reputation was used as a moderator variable, and the company's ESG score was used as a mediator variable.
  ‣ A study on the relationship between corporate's Tobin's Q (MB, ROE, OIS), CSR-ESG scores and corporate's Gapjil-related internet news media exposure and attention.
  ‣ The news keywords to be analyzed were selected and enriched through association rule analysis.
  ‣ The occurrence of controversial issues should be considered in the portfolio management because they act as a key factor for the decline of firm value.

On Return Seasonality

Fall 2019 ~ Winter 2019
Seoul, Korea

Co-Author
  ‣ Replicated Keloharju, Linnainmaa, and Nyberg (2016)'s work using Korean stock return data and found strong return seasonalities as well.
  ‣ The abnormal alpha of Portfolio 5 is 1.244% per month, and it appears strongly significant with t-statistic of 4.09.

The Role of the Media: Investor Sentiment and IPO Stock Exchange Trends

Fall 2019 ~ Winter 2019
Seoul, Korea

Co-Author
  ‣ Researched the influence of pre-IPO (Initial Public Offering) corporations' news coverage on performance or business plan upon initial public offering and post-IPO stock return.
  ‣ Researched the influence of media tone and analysis perspective on the stock exchange trends in the market.

Pointer Network Analysis of Financial Unstructured Data and Enterprise Value

Fall 2018 ~ Spring 2019
Seoul, Korea

Co-Author
  ‣ Utilized the Pointer Network to examine and analyze the Corporate Social Responsibility of different companies. Mainly focused on analyzing unstructured data such as media reports and news articles.
  ‣ Participated in the development process of a query system by implementing the pointer network analysis

Relevant Coursework

University Courses

Spring 2014 ~ Present
Seoul, Korea

  ‣ MGMT 1001 Business Statistics
  ‣ MGMT 1004 Business Mathematics
  ‣ MGMT 2001 Management Information Systems
  ‣ MGMT 2006 Management Science

- MATH 1101, 1102 Calculus I, II
- 113409-21001 Linear Algebra (Credit Exchange)
- MATH 2501 Probability and Statistics
- MGMT 3023 Data Analytics and Management
- MGMT 4024 Management Information Systems Seminar
- MGMT 4027 Economics of Information and Strategy
- MGMT 7123 Econometrics (Graduate School Lecture)

Online Courses *Spring 2014 ~ Present*

- **An Introduction to Interactive Programming in Python**, *Rice University, Coursera*
  URL: https://www.coursera.org/account/accomplishments/verify/ZPL9JEG7LK
- **Python Data Structures,** *University of Michigan, Coursera*
  URL: https://www.coursera.org/account/accomplishments/verify/HHNFLLY4HXFZ
- **Pattern Discovery in Data Mining**, *University of Illinois-Urbana Champaign, Coursera*
  URL: https://www.coursera.org/account/accomplishments/verify/R2YJYNLLD4
- **Machine Learning**, *Stanford University, Coursera*
  URL: https://www.coursera.org/account/accomplishments/verify/37XN2TZYD9GD
- **Intro to Deep Learning with PyTorch,** *Udacity*
- **Neural Networks and Deep Learning**, *deeplearning.ai, Coursera*
  URL: https://www.coursera.org/account/accomplishments/verify/GRSUVE62ZZ76
- **Improving Deep Neural Networks: Hyperparameter tuning, Regularization, and Optimization,** *deeplearning.ai, Coursera*
  URL: https://www.coursera.org/account/accomplishments/verify/R673QRCPTQR6
- **Structuring Machine Learning Projects**, *deeplearning.ai, Coursera*
  URL: https://www.coursera.org/account/accomplishments/verify/UD6FTFJ3KHZS
- **Sequence Models**, *deeplearning.ai, Coursera*
  URL: https://www.coursera.org/account/accomplishments/verify/K2QLSKD77PA8
- **In-progress Courses**
  - **Excel to MySQL: Analytic Techniques for Business Specialization,** *Duke University, Coursera*
  - **Statistics and R,** *HarvardX, edX*
  - **Probability and Statistics in Data Science using Python,** *UCSanDiegoX, edX*
  - **Machine Learning for Trading,** *Udacity*

WORK EXPERIENCE & LEADERSHIP

DeepSearch Inc. (UBERPLE) *Jul. 2018 ~ Aug. 2018*
Research Assistant *Seoul, Korea*
- Carried out research on CSO doctorate thesis topic "Correlation between Unstructured Data in Finance and Credit Evaluation"
- Assisted the 3rd Samsung Creative Square Fair
- Participated in theme conceptualization project for Samsung Asset Management ETF (Exchange Traded Fund) in various fields such as secondary cell, mobile games, North Korea, and fried chicken industry (http://www.koreaherald.com/view.php?ud=20180911000828).
- Built ETF topic through deep learning (CNN) and text mining.

Ministry of Foreign Affairs, Republic of Korea *Aug. 2015 ~ Jul. 2017*
Military Service *Seoul, Korea*
- Worked for the Ministry of Foreign Affairs (Planning and Coordination Office, Ambassador's Office, and Ministerial Candidate Office) during military service.
- Assisted coordination of annual Ulchi-Freedom Guardian (UFG) exercise, a combined military exercise between South Korea and the United States.

- ‣ Assisted confirmation hearings for minister nominee Kang Kyunghwa.

Shinhan Investment Corp.   *Jul. 2015*
Intern   *Seoul, Korea*
- ‣ Worked at the FICC department's RP division and assisted briefing sessions about daily stock exchange trends and financial issues.
- ‣ Worked at the Equity department's Financial Derivative division.

Kyung Hee University Publication Support Office   *Dec. 2018 ~ Feb. 2019*
Lead Research Assistant   *Seoul, Korea*
- ‣ Led the team of research assistants for publication of the book *IT and Business Analytics Systems in the Era of the 4th Industrial Revolution*. (ISBN 9788959727223(8959727229))
- ‣ Took responsibility in gathering data about business analytics chapters
- ‣ Acknowledged as co-author with other research assistants.

Kyung Hee University Publication Support Office   *Nov. 2019 ~ Present*
Lead Research Assistant   *Seoul, Korea*
- ‣ Assembled the team of research assistants for publication of the book *General Introduction of AI Technology in Business Analytics* (Preliminary Title)
- ‣ Researched real application cases of AI technology in business analytics, marketing, finance, and human resources area to research for ways to improve corporate profitability and efficiency

Proseed (Business Studies Club) at Kyung Hee University   *Mar. 2018 ~ Dec. 2018*
Seminar Chief   *Seoul, Korea*
- ‣ Coordinated weekly seminar plots and managed discussions during seminars.
- ‣ Planned and Conducted the official industry case study with Asan Foundation.

  - ◆ **Case Study Clients:**
    - ‣ CJ 4D-Plex
    - ‣ GinGliders
    - ‣ NHN ent.
    - ‣ Dable
    - ‣ BearBetter
    - ‣ Simmons
    - ‣ NC Soft
    - ‣ Kolmar Korea

HONORS & DISTINCTIONS

Ministerial (Byeongseh Yoon) Award   *Dec. 2016*
Ministry of Foreign Affairs   *Seoul, Korea*
- ‣ For excellence in departmental duties and publication of research paper *Investigating the Impact of Corporate Social Responsibility on Firm's Short/Long-term Performance through Online Text Analytics* (Lee et al., 2016)

Award Certificate   *May. 2016*
Ministry of Foreign Affairs   *Seoul, Korea*
- ‣ For excellence in departmental duties.

Grand Prize   *Oct. 2019*
Kyung Hee University, Education Innovation Center   *Seoul, Korea*
- ‣ For excellence in research paper publication
- ‣ Awarded a scholarship by the amount of $250

Academic Student Scholarship (Junior year)   *Jul. 2018*
Kyung Hee University   *Seoul, Korea*
- ‣ For excellence in research paper publication

- Award Amount: $1,000

Superiority Scholarship (All Semesters of Enrollment) *Mar. 2014 ~ Present*
Kyung Hee University *Seoul, Korea*
- For excellence in academic performance with the highest GPA in the department of business management
- Award Amount: $3,500 * 7 Semesters

Best Portfolio Award (Grand Prize) *Nov. 2018*
Kyung Hee University *Seoul, Korea*
- For excellence in an academic portfolio in all Kyung Hee University departments.

TECHNICAL SKILLS

Language Skills
- **Native** in Korean
- **Fluent** in English language (Reading, Writing, Listening, Speaking)
  - IBT TOEFL
  - GRE Verbal 152

Software Handling Skills
- Python
- R
- STATA
- Bloomberg Terminal
- Thomson Reuters Eiko
- Tableau
- UCINET (Elementary)
- SAS (Elementary)
- JAVA (Elementary)

RESEARCH REFERENCES

Ohbyung Kwon
Professor
Kyung Hee University
- Advising Professor for:
  Business analytics, management information system field, and the
  utilization of IT knowledge and theory in interpreting business-related
  data.

Email: obkwon@khu.ac.kr

Taewook Ted Ahn
Chief Sales/Strategy Officer (CSO), CFA, FRM
Ph.D. Candidate in Finance
DeepSearch Inc.
- Advisor for:
  Research paper and study on enterprise-data correlation, and the area of
  financial technology.

Email: tahn@deepsearch.com

Jaehong Park
Professor
Kyung Hee University
- Advisor for:
  Data science studies in relation to quantitative economics.

Email: jaehp@khu.ac.kr