Younghun Lee

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Profile

Computer Science Ph.D. student interested in **machine learning** applications for **natural language processing**. Proficient in academic research, software development, information retrieval, and social network analysis.

Education

Aug 2019 to Present
Purdue University, West Lafayette, Indiana
Doctor of Philosophy (PhD) in **Computer Science**
- Study Emphasis: **Natural Language Processing**, Advisor: Professor Dan Goldwasser

Sep 2015 to Apr 2017
University of Michigan, Ann Arbor, Michigan
Master of Science in **Information**, GPA: 3.83/4.0
- Study Emphases: **Information Retrieval** and **Human-computer Interaction**
- Research: Interaction retrieval and analysis, advised by Professor Mark W. Newman
- Award: **Outstanding Graduate Student Instructor of the Year** in 2016-2017.

Mar 2008 to Feb 2015
Seoul National University, Seoul, South Korea
Bachelor of Science in **Electrical and Computer Engineering**, GPA: 3.62/4.3
- Study Emphases: **Applied Electrical Engineering** and **Information Visualization**
- Research: Data mining and visualization, advised by Professor Joonhwan Lee
- Award: **Dean of Faculty of Liberal Education Prize (1st Prize)** in Fall 2012.

Academic Experience

Sep 2016 to Apr 2017
Research Intern at **Seoul National University, Machine Intelligence Lab**
- Conducted independent research on natural language processing and machine learning, focusing on their social applications

Sep 2016 to Apr 2017
Graduate Student Instructor at **University of Michigan, School of Information**
- Fall 2016: Taught *Data Oriented Programming* (SI-206) to 88 undergrad students
- Winter 2017: Taught *Intermediate Programming* (SI-507) to 127 graduate students

Nov 2016 to Apr 2017
Independent Study—User Interaction Pattern Retrieval and Analysis
- Implemented an Android web emulator from a Java application that captures user interaction patterns in mobile applications and stores log data in Firebase database
- Recruited 100 users from Amazon Mechanical Turk and analyzed log files in order to determine the type of tasks

Nov 2015 to Apr 2016
Research Assistant at **IRIS (Institute for Research on Innovation & Science)**
- Improved the usability of IRIS portal webpage dashboard by implementing 6 main features (PHP, JavaScript, JQuery)
- Altered $O(n^2)$ key generation algorithm into O(n) by implementing a hash table

Publications

Oct 2018
Younghun Lee, Seunghyun Yoon and Kyomin Jung, *Comparative Studies of Detecting Abusive Language on Twitter*, EMNLP 2018 Workshop on Abusive Language Online, Oct 2018, Brussels, Belgium

Invited Talks

Dec 2018
"Comparative Studies on Detecting Abusive Language on Twitter" at **NAVER** *[link]*

Selected Projects

Feb 2017 to Apr 2017 — **Revealing the Network and Diffusion Patterns of False Information**

- Customized *Twitter API for Python* in order to retrieve more than a million messages containing specific URL information from Twitter
- Modeled friends and follower network graphs, and analyzed them with centrality measures and identified characteristics of false information

Nov 2016 to Dec 2016 — **Investigating the Effect of Presidential Election Results on Hate Crimes**

- Developed a Python program with NLTK in order to retrieve Twitter messages on hate crimes and analyze the sentiment of each message
- Investigated the statistical significance of a null hypothesis with t-statistics

Mar 2016 to Apr 2016 — **Developing a UFO Search Engine** (Summary Paper)

- Improved an existing UFO search engine by evaluating different information retrieval methodologies such as inverted index, tf-idf, PageRank, and query expansion

May 2014 to Jun 2014 — **Sawtooth Bubble Chart—Visualizing Human Emotion** (Summary Paper)

- Retrieved and categorized Twitter data by time, age, and geolocation
- Implemented a model that visualizes arousal and valence level of human emotion of each tweet using Affective Norms for English Words dictionary

Mar 2014 to May 2014 — **Korean Text Analysis—Relevancy Visualization of Morphemes**

- Developed a vector space model that parses a Korean document, calculates the intensity of relevancy between meaningful words by cosine similarities
- Improved the model by experimenting with weights on different n-grams

Dec 2013 to Jan 2014 — **Visualizing Articles with Different Viewpoints**

- Built a web application that parses two Korean articles of the same subject into morphemes, classifying their similarities and differences, and visualizing them with word clouds

Professional Experience

Jun 2016 to Aug 2017 — **UX Developer Intern** at **Gale Cengage Learning**, Farmington, Michigan

- Developed a web application for internal salespeople to help them demonstrate the value of Gale's resources and recommend suitable products to customers

Jan 2015 to Jul 2015 — **Associate Software Engineer** at **Samsung Electronics Co., Ltd.**, Suwon, South Korea

- Achieved 2nd place in the Creative Idea Competition held by Digital Media and Communication R&D Center

Reference

Dan Goldwasser — Assistant Professor

- Purdue University, Department of Computer Science
- 2142A Lawson Bldg, 305 N University St, Lafayette, Indiana 47907
- Email: dgoldwas@purdue.edu

Mark W. Newman — Associate Professor

- University of Michigan, School of Information
- 4380 North Quad, 105 S State St, Ann Arbor, Michigan 48105
- Office: +1 (734) 764-0020 Email: mwnewman@umich.edu

Kentaro Toyama — W.K. Kellogg Associate Professor of Community Information

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- 3444 North Quad, 105 S State St, Ann Arbor, Michigan 48105
- Office: +1 (734) 763-8427 Email: toyama@umich.edu