

# Nayoung Kim

[nkim48@asu.edu](mailto:nkim48@asu.edu) | <https://nayoungkim94.github.io> | <https://www.linkedin.com/in/NayoungKimASU/>

---

## RESEARCH INTERESTS

---

My research is mainly about Trustworthy AI. My recent focus is studying fairness and robustness of AI/ML systems.

## EDUCATION

---

### Arizona State University

*PhD, Computer Science*

**Spring 2021 – 2024**

*Tempe, AZ*

- Data Mining & Machine Learning Lab (Advisor: Prof. [Huan Liu](#))
- Funded by [DHS-CAOE](#), [ONR](#), [Mathpresso](#)

### Korea University

*MS, Computer Science & Engineering*

**2017 – 2019**

*Seoul, South Korea*

### Korea University

*BE, Computer Science & Engineering*

**2013 – 2017**

*Seoul, South Korea*

## TECHNICAL SKILLS

---

**Languages:** Python, C, Java, Javascript, SQL

**Skills:** Data analysis using Python, PyTorch, Keras, Numpy, Scikit, Docker, Google Cloud Platform and AWS

## WORK EXPERIENCE

---

### DHS-CAOE

*Graduate Research Assistant*

**May 2022 – Present**

*Tempe, AZ*

- Creating and managing a comprehensive dashboard of data analysis and visualization using NodeJS and Flask
- Building and implementing BERT-based topic modeling and text summarization models

### ONR

*Graduate Research Assistant*

**Jan 2021 – Aug 2022**

*Tempe, AZ*

- Researched on COVID-19-related online data to offline data connection using topic modeling
- Performed comprehensive analysis on COVID-19-related tweets

### Mathpresso

*Research Assistant*

**Jan 2021 – May 2021**

*Tempe, AZ*

- Lead a project to automatically classify image-based mathematical problems according to its difficulty level
- Implemented LaTeX format mathematical formula embeddings using Tangent-s and word embeddings

### Korea University

*Undergrad Researcher*

**2016**

*Seoul, South Korea*

- Collected and annotated biomedical reference dataset for training RNN-based relation extraction model

## SELECTED PROJECTS

---

### Interpreting Text Classifiers with Counterfactual Explanation

**2021**

- The final project of CSE 472 (Social Media Mining)
- Implemented SOTA counterfactual models for a multi-layer neural network for classification.

## Fake/Bot Detection in Twitter Activity

2021

- The project of CSE 573 (Semantic Web Mining)
- Discovered uncovered bots and detect top manipulators using community detection

## Biomedical Entity Relation Extraction

2017

- Extracted Biomedical entities and identify their relation existence
- Dataset: Comparative Toxicogenomics Database(CTD) provided chemical-gene, chemical-disease, and gene-disease relation data collection through distant supervision due to lack of training data
- Implemented and trained tree-RNN based model SPINN along with word-character embedding model CharWNN

## PUBLICATIONS (Google Scholar: [Nayoung Kim - Google Scholar](#))

---

### Domain Adaptative Stance Detection via Counterfactuals, In progress

Nayoung Kim, Ahmadreza Mosallanezhad, Lu Cheng, Huan Liu

### Bridge the Gap: the Commonality and Differences Between Online and Offline COVID-19 Data

SBP-BRIMS'22

Nayoung Kim, Ahmadreza Mosallanezhad, Lu Cheng, Baoxin Li, Huan Liu

### Debiasing Word Embeddings with Nonlinear Geometry

COLING'22

Lu Cheng, Nayoung Kim, Huan Liu

## TEACHING EXPERIENCE

---

### Teaching Assistant

Aug 2021 – May 2022

CSE 205: Object-Oriented Programming and Data Structures, Arizona State University

Tempe, AZ

- Instructed data structures and object-oriented programming with Java

### KU JUMP Tutor

Mar 2015 – Feb 2016

Korea University, Seongbuk-gu Office, JUMP, Inc.

Seoul, South Korea

- Taught high school students the 'Artificial Intelligence Basic course'.
- Specialization in the basics of A.I. theory and machine learning.
- Held practice sessions for implementation of machine learning applications.

## PRESENTATIONS

---

### Debiasing Word Embeddings with Nonlinear Geometry

2022

The 29th International Conference on Computational Linguistics (COLING '22), Gyeongju, Republic of Korea

### Bridge the Gap: the Commonality and Differences Between Online and Offline COVID-19 Data.

2022

The 15th International Conference on Social Computing, Behavioral-Cultural Modeling & Prediction and Behavior Representation in Modeling and Simulation (SBP-BRIMS '22), Pittsburgh, USA

### Entity Relation Extraction on Multiple Sentences with Encoder and Relation Representation.

2018

Korea Computer Congress (KCC '18), Jeju, Republic of Korea

## AWARDS AND HONORS

---

### Conference Scholarship

2022

SBP-BRIMS 2022

<b>Fulton Scholarship</b>	<b>2021</b>
<b>Ira A. Fulton Schools of Engineering, Arizona State University</b>	
Offered in recognition of academic achievements	
<b>General Scholarship.</b>	<b>2017</b>
<b>College of Information, Korea University</b>	
Offered in recognition of extraordinary academic achievements to MSc students	
<b>Work-Study Scholarships</b>	<b>2015</b>
<b>College of Information, Korea University</b>	
Offered in recognition of extraordinary academic achievements to work-study students	
<b>Academic Excellence Scholarships</b>	<b>2013</b>
<b>College of Information &amp; Communication, Korea University</b>	
Offered to top 6% freshmen in the College of Information & Communication	
<b>EXTRACURRICULAR ACTIVITIES</b>	
<b>Reviewer at ECML-PKDD, ACM MultiMedia, ASONAM, AAAI conferences</b>	<b>2022</b>
<b>Volunteer at WSDM 2022 conference</b>	<b>2022</b>
<b>Volunteer at KDD 2021 conference</b>	<b>2021</b>
<b>Reviewer at ASONAM, IEEE CogMI conferences</b>	<b>2021</b>