

# HYUN JUN CHOI

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## EDUCATION

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**University of Glasgow, School of Computing Science** – Glasgow, Scotland, UK **January 2024**  
*Doctor of Philosophy in Computing Science*

**University of Southern California, Viterbi School of Engineering** – Los Angeles, CA **December 2018**  
*Master of Science in Data Informatics*

Relevant courses include but are not limited to: Machine Learning, Foundations and Applications of Data Mining, Foundations of Data Management, Data Informatics Professional Practicum, Probability and Statistics for Data Science, Information Visualization, and Directed Research

**Inha University, College of Information Technology & Engineering** – Incheon, South Korea **August 2016**  
*Bachelor of Science in Computer Science*

Relevant courses include but are not limited to: Data Structures, Algorithms, Mathematical Statistics 1 and 2, Multivariate Statistics and Lab, Methods of Statistical Analysis, and Design Object-Oriented Development

## RESEARCH INTERESTS

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- Deep Learning, Recommender Systems based on Deep Learning, Data Mining, Machine Learning, Neural Network Hyperparameter Optimization, and Computer Vision.

## HONORS AND AWARDS

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- 1<sup>st</sup> semester: Honor student **2016**
- 2<sup>nd</sup> semester: Honor student **2012**

## RESEARCH EXPERIENCE

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### Research Assistant

University of Southern California – Los Angeles, CA

**January 2018 – December 2018**

#### Neural Network

- Conducted research on the generalization properties of Neural Networks (NNs).
- Investigated ways to improve the generalizability of NNs across more than one hundred real-world datasets, using the *Keras* library in *Python*.

### Research Assistant

Image Informatics Lab, Inha University – Incheon, South Korea

**January 2013 – April 2014**

#### Computer Vision

- Participated in the research project titled “Classification of Synthetic and Real Image using Pattern Features Research”.
- Evaluated the performance of the proposed image classification algorithm based on Support Vector Machine (SVM) using *Matlab*.
- Myeong Hui Ha, Hyun Jun Choi, Min Kook Choi, Sang Chul Lee, Classification of Synthetic and Real Images Using Pattern Features (2014) [[English](#), [Korean](#)]

#### Human-Computer Interaction

- Participated in the research project entitled “Development of MIMO HCI SW Technology for Active Intentional Cognition and Response of Multiple Users”.
- Developed software (in *Java*) to estimate a user’s concentration levels using SVM and a computer mouse click and movement data.

## POSTER PRESENTATION

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HM LEE, **HJ CHOI**, MK CHOI, and SC LEE. *Classification of Synthetic and Real Images Using Pattern Features*. Paper presented at Image Processing and Image Understanding Conference (2014) [[English](#), [Korean](#)]

## PROJECTS

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### Visualization on datasets from the Correlates of Wars

INF 554 Information Visualization

University of Southern California – Los Angeles, CA

**August 2018 – December 2018**

- Visualized military expenditures of top-10 spenders, information concerning militarized interstate disputes, wars, and international trade using datasets provided by the Correlates of Wars. A graphic demonstration was prepared of the relationship between the number of countries at war and the total amount of international trade.
- Implemented the responsive and interactive charts with *D3.js*.
- Designed and developed a web application on *Node.js*, and front-end interface using *Angular* written in *JavaScript* and *Bootstrap* CSS framework.
- Hyun Jun Choi, Shiv, Information Visualization on Wars and WorldTrade Datasets (2018) [[Report](#), [GitHub](#), [Website](#)]

### Liver Transplant Data Analysis

INF 560 Data Informatics Professional Practicum

University of Southern California – Los Angeles, CA

**January 2018 – May 2018**

- Analyzed a dataset provided by the Department of Surgery at USC’s Keck School of Medicine so as to identify features associated with graft survival after orthotopic liver transplantation (OLT).
- Utilized statistical methods, NNs, and SVM to predict graft survival after OLT using pre-transplant features.
- Implemented NNs and SVM with the *Scikit-learn* and *Keras* library in *Python*.
- Hyun Jun Choi, Yujia Deng, Ana Farzindar Predict Graft Survival after OLT using Pre-Transplant Features using machine learning and statistical method (2018) [[Report](#)]

### Movie Recommender System

INF 553 Foundations and Applications of Data Mining

University of Southern California – Los Angeles, CA

**March 2018 – March 2018**

- Implemented a movie recommender system with matrix factorization approach and so on with *Python* and *Apache Spark*. [[GitHub](#)]

### Android Application Development

INF 551 Foundations of Data Management

University of Southern California – Los Angeles, CA

**January 2017 – May 2017**

- Developed an Android application (in *Java*) for the USC community, which includes students, faculty, and alumni, to recommend good resources in the USC campus and share their extraordinary experiences.
- Used *Firebase* as the database to store all the data and resources.
- Hyun Jun Choi, Wanjin Li, Taoran Ju, Project Final Report (2017) [[Report](#), [GitHub](#)]

## WORK EXPERIENCE

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Sergeant, 7<sup>th</sup> Ammunition Depot, Korean Army, Chungju, South Korea

**December 2009 – October 2011**

- Guarded military areas

## SKILLS & INTERESTS

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**Programming Languages:** Python, C/C++, DynamoDB, Java, JavaScript, SQL, NoSQL, MATLAB, MongoDB, HTML/CSS, JavaScript

**Visualization tools:** D3.js, Processing.js, P5.js, Three.js, WebGL, OpenGL

**Web Framework and Cloud Computing:** Apache Hadoop, Apache Spark, Apache Cassandra, Apache Hive, AWS (EC2)

**Software:** Microsoft Office, Microsoft Excel

**Markup Languages:** Latex, XML

**Programming Environments:** MATLAB/Simulink

**Collaboration Tools:** Git

**Statistical Analysis Software:** R, Statistical Analysis System (SAS)

## LEADERSHIP & SERVICE

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**Public Relations Team Leader, TEDxInhaU** **2012**

Inha University – Incheon, South Korea

- Explained the purpose of TEDxInhaU to the school and to private companies to obtain the necessary funding to hold a TedxInhaU conference.
- Advertised TEDxInhaU conference.

**Teacher, Yonghyeon-dong Community Service Center, Incheon, Korea** **2012**

- Taught programming languages and mathematics to underprivileged middle and high school students who could not afford private tutoring fees

**Club President, Inha University Travel Club** **2008–2009**

Inha University – Incheon, South Korea

## CERTIFICATION

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**HIPPA**

Los Angeles, CA

**January 2017 – Current**

## ORGANIZATION MEMBERSHIP

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**Member, AAAI**

**January 2017 – Current**

**January 2017 – Current**

**Member, SoCal K Group**

Los Angeles, CA

**January 2018 – Current**

- SoCal K-Group is a group of arts and technology experts in the IT field. This group has seminars, studies, hacker tones, and discussion activities on the Information Technology field.

**Member, USC Korean Graduate Student Association (KSGA)**

University of Southern California – Los Angeles, CA

**January 2017 – December 2018**

## LANGUAGES

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Korean (Native Speaker), English (Fluent)