

# Cheol Jun Cho

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## EDUCATION

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### Seoul National University (SNU)

Seoul, Korea

*B.S. in Computer Science and Engineering*

*Mar 2014 - Jun 2016, Sep 2018 - Aug 2020*

- GPA: 4.2/4.3, Summa Cum Laude

## RESEARCH EXPERIENCE

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### JeeLab, Center for Neuroscience, Brain Science Institute

KIST, Seoul, Korea

*Research Intern, Advisor: Dr. Jee Hyun Choi*

*Jul 2020 - Present*

- Computational Neuroscience; Cognitive Neuroscience; System Neuroscience
- Automated extracting tracking data from mice video
- Analyzed neural data and behavioral data to infer social hierarchy of mice

### Computational Clinical Science Laboratory

SNU, Seoul, Korea

*Research Intern, Advisor: Dr. Woo-Young Ahn*

*Mar 2020 - Present*

- Computational Neuroscience; Cognitive Neuroscience;
- Worked on computational modeling and hierarchical Bayesian analysis on behavioral and multi-modal data

### KAIST Interaction Laboratory (KIXLab)

KAIST, Daejeon, Korea

*Summer Research Intern, Advisor: Prof. Juho Kim*

*Jun 2019 - Aug 2019*

- Human Computer Interaction; Natural Language Processing
- Worked on speech act based chatbot project as part of national funded AI-flagship
- Designed/experimented deep learning model(bi-LSTM like) for speech act classification and explored word embedding models (word2vec, GloVe, BERT)
- Tested on the Switchboard Dialog Act (SwDA) corpus and Verbal Response Mode dataset

### Computing and Memory Architecture Laboratory (CMALab)

SNU, Seoul, Korea

*Research Intern, Advisor: Prof. Sungjoo Yoo*

*Dec 2018 - Jun 2019*

- Computer Vision; Deep Learning
- Explored methods regarding computing efficiency of deep learning model
- Explored methods combining online-training and teacher-student framework

## COURSE PROJECTS

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### Bachelor's Thesis

SNU, Seoul, Korea

*Independent Research*

*Mar 2020 - Jun 2020*

- Computer Vision; Natural Language Processing
- Title: Neural Symbolic Visual Question Answering System: application to real world data and limitation
- Implemented symbolic question encoder, scene graph generator, and symbolic program executor
- Tested on General Question Answering Dataset, and analyzed limitation of application

### Brain-Mind-Behavior Independent Research Course

SNU, Seoul, Korea

*Independent Research*

*Sep 2019 - Dec 2019*

- Natural Language Processing; Interpretable AI
- Title: Deep Neural Networks with Attention Pooling for Dialogue Act Recognition
- Researched dialogue act classification model as extension of work in summer internship
- Verified self-attentive pooling method for integrating token vectors to sentence vector
- Interpreted model inference process by analyzing attention weights
- Received best research award in 2019 Brain-Mind-Behavior Research Presentation

### Creative Integrated Design Course

SNU, Seoul, Korea

*Project: Plant Disease Detecting Web Service*

*Sep 2018 – Dec 2018*

- Computer Vision; Interpretable AI
- Developed plant disease detection web service by utilizing deep learning as team of three
- Trained/evaluated image classification model for plant disease detection
- Visualized inference process utilizing guided GRAD-CAM technique
- Implemented web service which provides detection/visualization/remedies recommendation

## OTHER PROJECTS

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### **SNU Creative Design Fair**

**SNU, Seoul, Korea**

*Project: Interactive Robotic Vacuum*

*Jun 2019 – Sep 2019*

- Robotics; Human Robot Interaction; Computer Vision
- Participated in SNU Creative Design Fair as team of four
- Designed unique pointed-shape body and implemented it from scratch
- Utilized omnidirectional wheels (mecanum wheels)
- Devised novel HRI platform : users interact with robot by hand gesture
- Developed smartphone app. featured by embedded hand gesture detecting model
- Our work was presented at International Capstone Design Fair 2019 (Korea, China)

## TECHNICAL SKILLS

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### **Programming Languages:**

- Python, R, Stan, C, C++, Arduino

### **Software Packages:**

- Deep Learning (Pytorch , Tensorflow), Computer Vision (opencv), Natural Language Processing (Gensim, NLTK), Data Analysis (Rstan, hBayesDM), Web Programming (Django), Machine Learning (Scikit learn), Other (Mediapipe)

## AWARDS AND HONORS

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|---|----------------------------------|
| Best research award from 2019 Brain-Mind-Behavior Research Presentation at SNU  | Sep 2019                         |
| 1st place of International Capstone Design Fair 2019 (Korea, China)             | Nov 2019                         |
| 2nd place of SNU Creative Design Fair of SNU College of Engineering             | Sep 2019                         |
| SNU's Tomorrow's Engineers Membership (honor society of college of engineering) | May 2016                         |
| Korea National Scholarship (fully funded)                                       | 2016 Spring, 2018 Fall-2019 Fall |
| Army Commendation Medal (ARCOM)   | Jun 2018                         |
| Certificate of Appreciation (CA) from US 8th Army                               | Jun 2018                         |
| SNU Merit Scholarship (fully funded)  | 2015 Spring, Fall                |
| SNU Merit Scholarship (half funded)   | 2014 Fall                        |

## OTHER SERVICES AND ACTIVITIES

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### **STEM Mini Vision Mentoring**

**2016, 2019**

- Visited middle and high schools as mentor
- Introduced Engineering School, especially about Computer Science,
- Shared my own learning strategies and experiences

### **Korean Augmentation to the United States Army (KATUSA)**

**Sep 2016 - Jun 2018**

- Served in 8th Army HHB IS G4 Information Management Office
- Supported electrical automation and equipment maintenance for operations

### **S20 project contest by Shinhan Bank**

**Mar 2016 - Jun 2016**

- Won 1st place as SNU's Tomorrow's Engineers Membership team
- Presented idea for smart banking with AI technologies