

## JU YEON, LEE

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<https://jheroine.github.io/juyeon/>

### RESEARCH INTERESTS

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- Machine Learning, Explainable AI, Precision medicine, Biomedical signal processing
- Brain-Computer Interface, Neuroscience-inspired AI, Human-Machine Interface

### EDUCATION

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#### HANYANG UNIVERSITY ERICA Campus (HYU)

Ansan, Korea

*Bachelor of Computer Science and Design Technology(dual degree), College of Computing*

Mar. 2017

- President/mentee of KT 5G Leverage Employment & Career Mentoring, organized by Women in Science, Engineering, Technology Center (WISSET), 2020
- Active mentor/member of H.E.I - Mentor, International Language (Chinese) Institute Mentoring Program, HY Institute for International Education, 2019
- Active mentor/member of Favor in Your Eyes club, local government & HY Univ offices supporting youths and adolescents, 2019

### EXTRACURRICULAR PROJECTS & EXPERIENCE

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#### D.REAM (Design. Real Experience for All Mankind) ACADEMY

Seoul, Korea

*HCI Lab, Yonsei University, Prof. Jinwoo Kim*

Jan. – Feb. 2021

- Studied principles of experience design based on HCI/UX related theories
- Produced a digital healthcare app to prevent posttraumatic stress disorder caused by pet-loss using DSM-5 diagnostics, customized content according to grief cycle and mood tracking methods

#### AI Technology Course (computer vision track)

Seoul, Korea

*Connect-AI Research Center, Yonsei University, PhD. Youngtaek Hong*

Jul. – Aug. 2020

- Studied image processing with Opencv and computer vision algorithms
- Produced Covid-19 infectious behavior detection using hand detection, area-calculation, Opencv

### RESEARCH EXPERIENCE

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#### Korea Brain Research Institute

Daegu, Korea

*Sensory & Motor Systems Neuroscience Group., Research Intern*

July. 2021 – Present

- Object detection project
  - Labeled and trained the body part of the animal using DeepLabCut, machine learning
  - Analyzed of animal movements over time.
- Stimulus Reconstruction
  - Carried out to decode sound stimulus from animals's neurons activity
  - Evaluated and compared by cochleagram spectrogram
- Stimulus Generator
  - Upgraded App's mainboard front UX
  - Made a function that make sound stimulus

#### Big Data Mining Lab(Hanyang University)

Ansan, Korea

*Research Dept., Undergraduate Research Student*

Mar. – June. 2021

- Fashion recommendation project
  - Classified and labeled fashion data targeting Southeast Asia

#### Data Science Lab(KT Affiliated Research Institute)

Seoul, Korea

*Industry Crowdsourcing Research Dept., Researcher*

Sep. – Dec. 2020

- Developed of seafood home meal replacement (HMR) reflecting customer needs

- Built data crawling HMR product review data, preprocessing text data using KoNLPy
- Analyzed customer reviews of HMR products through latent Dirichlet allocation (LDA)
- Topic modeling, emotional analysis
  - Extracted main ingredients and cooking methods for each HMR by NLP from shopping cart data
  - Performed market basket analysis (association analysis) using apriori algorithms from shopping data
- Predicted of Covid-19 hazardous areas using school population
  - Performed preprocessing and exploratory analysis of floating population data (2019-2020)
  - Analyzed map visualization changes in population movement after Covid-19 using floating population data
  - Predicted vulnerable areas to infection using school population data
- Developed professional counselor recommendation algorithms that reflect customer characteristics
  - Integrated and built psychological data from the Korea EAP Association
  - Developed counselor recommendation algorithms suitable for clients using collaborative filtering
  - Designed recommendations according to the weight of the client's information

#### **Design Technology Research Center((Hanyang University, AI Design Lab)**

*Research Dept., Undergraduate Research Student*

**Ansan, Korea**

**Jan. – Feb. 2020**

- Hyundai Motors project (future cars, self-driving cars, UX, interior design, living lab)
  - Conducted living lab experiments as auxiliary experimenter using buck
  - Derived an optimized vehicle layout for interior intervention considering vehicle architecture
  - Analyzed USER CASE and itemized quantification for setting ranges by combining optimal conditions for each system, such as sheets, displays and cockpits

#### **CONFERENCES & WORKSHOPS**

- Low Code workshop from Devs Speak (Microsoft APAC) **Jul. 2020**
  - Participated as Seoul speaker
  - Introduced the Low Code project using Microsoft's power platform
- Women's Engineering Research Workshop (WISSET) **Jul. 2020**
  - Participated as mentor speaker
  - Introduced software major and career

#### **SCHOLARSHIPS**

- HY Mentoring Scholarship **Mar. - Dec. 2019**
  - Favor In Your Eyes club, Hanyang University, total \$2,150
  - Taught English and mathematics to low-income children for 1 year
- Practical Talent Scholarship **Dec. 2019**
  - College of Computing, Hanyang University, total \$200
  - For outstanding grades and activities
- PBL Global Student Scholarship **Jun. 2017**
  - College of Business and Economics, Hanyang University, total \$1,600
  - Participated in economic cooperation projects between China and South Korea
- Autonomous Scholarship **Jun. 2017**
  - College of Business and Economics, Hanyang University
  - For outstanding grades and activities

#### **HONORS & AWARDS**

- Honors for mentee for Employment & Career Mentoring **Dec. 2020**
  - Women in Science and Engineering, Technology (WISSET)
  - Awarded for excellent activities

- SW Academic Conference, Software Business Group, Hanyang University **Dec. 2020**
  - Excellence prize
  - Developed an online travel kit app for Covid-19 using AS, JS, HTM
- Industry Cluster-Problem Based Learning Competition, Hanyang University **Dec. 2019**
  - Excellence prize
  - Surveyed 200 drivers and pedestrians and built traffic IoT services
- SW Startup IDEA Competition, Software Business Group, Hanyang University **Sep. 2019**
  - Excellence prize
  - Mobile door keys for increased security efficiency at shared accommodations
- Industry Cluster-Problem Based Learning Competition **Jun. 2018**
  - IC-PBL Center, Hanyang University
  - Excellence prize
  - Designed AI speakers for dementia patients using Python, JS, NLP

## **CERTIFICATION**

- Design Real Experience for All Mankind Academy **Feb. 2021**
  - Korea HCI (Human Computer Interaction) Association
- AI Technology (Advanced), computer vision **Aug. 2020**
  - National IT Industry Promotion Agency

## **VOLUNTEER ACTIVITIES**

- Global Power Platform Bootcamp from Microsoft **Feb. 2020**
  - Participated as Volunteer
  - Taught object detection
- H.E.I-Mentoring program **Jun. 2019 - Dec. 2020**
  - Participated as Korean mentor
  - Taught Korean to Chinese students and helped them adapt to Korea
- Mentoring program from Favor in Your Eyes club **Mar. - Dec. 2019**
  - Mentored English and math
  - Provided educational and emotional support to children from low-income families
- Experience Instructor from HY-3D start-up **Jun. 2018**
  - Helped elementary school students experience AR at the Ansan community service center in Gyeonggi-do
  - Used Microsoft HoloLens AR devices

## **ADDITIONAL, SKILLS & OTHERS**

- Fluent in Korean and English
- Advanced level in Matlab, Python, C/C++ languages
- Intermediate level in web development (HTML, CSS, Javascript, React etc.)
- Operating technology posting blog (+60 Postings) for 2 years; <https://heroine-day.tistory.com/>