

Junhyeok Jeong

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Education

Oregon State University

Corvallis, OR

Honors Bachelor of Science in Computer Science, 3.86 GPA

Sep. 2017 – June 2021

Main Courses

Data Structure, Analysis of Algorithms, Database Management Systems, Intro to AI, Machine Learning & Data Mining, Deep Learning, Software Engineering, Intro to Parallel Programming, Operating Systems, Mobile Software Development, Cloud Application Development

Research

- Data Analysis and Visualization with Unreal Engine - URSA Engage 2019 with Dr. Raffaele de Amicis
- Improve the Grasping Performance by Analyzing Target Objects with Computer Vision and Deep Learning Algorithm - Honors College Thesis with Dr. Cindy Grimm

Experience

Undergraduate Research Assistant

Nov. 2019 – May. 2021

Oregon State University

Corvallis, OR

- Implemented computer vision with OpenCV, PyTorch and Mujoco robotics as an undergraduate research assistant in the Dr. Cindy Grimm's grasping robot research team at Oregon State University
- Explored object detection frameworks (YOLOv3) and developed object measurement with OpenCV to get the location of detected object, it reached average 89% accuracy with 3D-printed shapes

Office Assistant

June. 2018 – Sep. 2018

IMG Advertising Company

Seoul, South Korea

- Authored data manipulation with Microsoft Excel and local festival advertisement documentary translations from Korea to English

Firearms repair technician SGT.

Jan. 2015 – Nov. 2016

Republic of Korea Army

Seoul, South Korea

- Enhanced soft skills like leadership, the importance of teamwork, and communication with teammates as a squad leader

Projects

Interactive Visualization for AI Education / JavaScript, React, TensorFlow, Keras

Sep. 2020 – June. 2021

- Undergraduate senior capstone team project with a mentor, Dr. Kahng Minsuk
- Developed a web-based interactive visualization tool with Jupyter Widgets and python for beginners who want to learn about AI or machine learning with various models
- Generated various visualization features like confusion matrix, accuracy changes, feature extractions, and connections across layers of AI model

Automatic investment bot for Cryptocurrency / Python, PyQt, OpenAPI

April. 2021 – April. 2021

- 2021 BeaverHacks Hackathon project with another undergraduate student
- Developed an automatic investment bot for cryptocurrency with cryptocurrency market's OpenAPI and Volatility Break-out strategy
- Designed user-friendly interfaces to check cryptocurrency's overview, chart, ask and bid orderbook, and login own account with API keys

Teachable Machine / JavaScript, TensorflowJS, NodeJS

March 2020 – Sep. 2020

- Independence project with a mentor, Dr. Kahng Minsuk
- Developed web-based tool with JavaScript that makes creating machine learning classification models fast, easy, and accessible to everyone
- Implemented Knn classifier and Neural Network with TensorflowJS API and it shows over 90% accuracy for each class with at least 10 images from a user

Object Detection for Grasping Robot / *Python, OpenCV, TensorFlow, YOLOv3, ROS* Nov. 2019 – May. 2021

- Honors Thesis Project with a mentor, Dr. Cindy Grimm
- Implemented YOLOv3 with camera sensors to detect object for the grasping robot arm. It reached 89% accuracy for each 3D-printed shape like sphere, cylinder, cone, and cuboid
- With ultrasonic sensor on Arduino board, learned about camera matrix to get height, width, and coordinates of the detected object

Online Bookstore Development / *Python, Flask, HTML/CSS, MySQL* April 2019 – June 2019

- Team project for the web development course at Oregon State University
- Developed an online bookstore with MariaDB to learn about frontend and backend communication
- Implemented Python Flask to host database server and to manage item stocks on the bookstore

Data Analysis and Visualization with Unreal Engine / *Python, Unreal Engine 4* Jan. 2019 – July 2019

- URSA Engage 2019 project with a mentor, Dr. Raffaele de Amicis
- Implemented a data visualization which converts from csv data to virtual world of Unreal Engine 4
- Explored Unreal Engine 4 to learn about AR/VR and implement data visualization

Technical Skills

- **Languages:** Python, C, C++, Dart, JavaScript, HTML
- **Web Development:** React.js, Node.js, CSS, Flask, RESTful APIs, Express, Flutter, Rabbit MQ
- **Database Management:** MySQL, MongoDB, MariaDB
- **Artificial Intelligence:** Keras, Python NumPy, TensorFlow, PyTorch, Google Colab, Jupyter Notebook
- **Other Tools:** Docker, Git, VS Code, Visual Studio, Linux, Unreal Engine 4, PyQt

Activities

BeaverHacks Spring 2021 April. 2021

- Awarded the 3rd place with the 'Automatic Investment Bot for Cryptocurrency' project at 2021 BeaverHacks Hackathon

2019 Summer Undergraduate Research Symposium Sep. 2019

- Presented URSA research poster (data analysis and visualization with Unreal Engine) at 2019 Summer Undergraduate Research Symposium

Honors College Leadership Challenge Course Sep. 2018

- Built teamwork skills by attending Honors College Leadership Challenge Course at OSU

Intel Oregon FIRST LEGO League Dec. 2017

- Supported Intel Oregon FIRST LEGO league progress and participants as a student volunteer