WONSEO CHOI

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https://wonseo-c.github.io/

EDUCATION

Hanyang University Mar 2022 - Feb 2024
Master of Science in Electronic Engineering

- *Research Topic: AI for Network/Embedded Systems and Modeling/Simulation of Cyber-Physical Systems*
- *Overall GPA: 4.44 / 4.5*

Hanyang University Mar 2017 - Feb 2022
Bachelor of Science in Electric Engineering

- *Minor in Electronic Engineering*
- *Overall GPA: 4.07 / 4.5 (Major GPA: 4.18 / 4.5)*

RESEARCH PROJECT

AI for Network/Embedded Systems

- Localized WiFi Access Points using Convolutional Neural Network (with KT)
- Predicted Path-Loss using Deep Neural Network(DNN)

Modeling/Simulation of Cyber-Physical Systems

- Implemented the Savina Benchmark to support Mutation in the reactor-oriented coordination language Lingua-Franca (in collaboration with U.C. Berkeley).

Additional Projects

- Fused IMU sensors for location tracking using Kalman Filter (MCU Board)
- Developed Android app for handwriting number recognition using Google ML Kit
- Developed Apple Watch app integrating UWB technology and advanced medical data monitoring
- Designed localization system using IMU tags

PAPER

1. **W. Choi** et al., Enhanced Wi-Fi Access Point Positioning Using Hexagonal CNN With Mobile Data and Urban Information, in IEEE Internet of Things Journal, vol. 11, no. 20, pp. 33820-33832, 15 Oct.15, 2024.

2. Sung, S., **Choi, W.**, Kim, H., & Jung, J. I. (2023). Deep Learning-Based Path Loss Prediction for Fifth-Generation New Radio Vehicle Communications. IEEE Access.

3. Kim, T. M., **Choi, W.**, Choi, I. Y., Park, S. J., Yoon, K. H., & Chang, D. J. (2021). Semi-AI and Full-AI digitizer: the ways to digitalize visual field big data. Computer Methods and Programs in Biomedicine, 207, 106168.

4. Suh, S., Cheon, S., **Choi, W.**, Chung, Y. W., Cho, W. K., Paik, J. S., ... , & Lee, Y. O. (2022). Supervised segmentation with domain adaptation for small sampled orbital CT images. Journal of Computational Design and Engineering, 9(2), 783-792.

EXPERIENCE

LG Display Mar 2024 - Current
Big Data Scientist/Engineer *Paju, Gyeonggi-do*

- Re-architected an automated analysis system from R to **Python (Polars)**, optimizing data processing speed and system stability.
- Established an end-to-end **MLOps pipeline** for auto-tuning systems to automate model deployment and ensure production quality.
- Developed and deployed ML-based yield prediction models, leveraging big data to enhance manufacturing efficiency.
- Optimized large-scale data processing workflows using R and Python to identify and mitigate yield loss factors.

Catholic Univ. of Korea Yeouido ST. Mary's Hospital Aug 2020 - Feb 2021
Research Intern *Seoul, Korea*

- Developed an automated AI system to extract test results from image-based sheets using Big Data techniques.
- Conducted experiments and research on domain adaptation using Generative Adversarial Networks (GANs), with a focus on 3D segmentation tasks for orbital tumor delineation.

KIST Europe Feb 2020 - Jul 2020
Intern *Saarbrücken, Germany*

- Developed an automated AI system for heart rate calculation through biomedical image processing, analyzing size variations in sequential heart images.
- Enhanced cell tracking performance by leveraging Explainable AI (XAI) techniques to analyze and optimize individual U-Net layers with respect to localization performance.

TECHNICAL STRENGTHS

Data Engineering	**Python (Polars, Pandas)**, R, SQL, Spark
Machine Learning	**MLOps System Design**, PyTorch, TensorFlow, Keras, Scikit-learn
Programming Tools	MATLAB, Assembly, Java, C++, TypeScript
Environments	Linux (Ubuntu Server), Docker, Git, Mac/Windows

GRADUATE PORJECT

1. Detected kickboards using embedded hardware (Jetson Nano Board)

2. Developed a contactless kiosk: designed and developed a touchless keyboard and mouse using AI detection and clustering

ONLINE-DEMO

Wonseo Choi, Yongoh Lee, “Attention-aware U-Net toward the interpretability of single cell segmentation”, KCCV 2020, Republic of Korea (Online) - demo video

OTHER ACTIVITIES

겨자씨 키움센터 Feb 2021 - Aug 2021
Founding Activities

· Developed an AI learning model (module) for digitizing obligatory recording papers.

Visiting U.C. Berkeley Jun 2022 - Jul 2022, Feb 2023

· Designed and developed the implementation of Lingua-Franca mutations.

TEACHIING ASSISTANT

Probability & Statistics Sep 2023-Dec 2023

· Generated random variables based on probability distributions using MATLAB.

Computer Network Sep 2023-Dec 2023

· Implemented basic algorithms for computer networks using MATLAB.

AWARDS

1. Academic Excellence Award in the Hanyang Univ. graduation ceremony *Feb 2022*

2. Encouragement Award in the ”HY-Running Pace Maker” Program *Jan 2022*