

JEREMY WINSTON

AI and Embedded Software Engineer

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PERSONAL PROFILE

I am a motivated and open-minded individual with excellent interpersonal skills. I have two years of experience as a research assistant and six months internship as an software AI Engineer in South Korea. With a background in Computer Science and experience in AI research and software development, I have developed strong skills in AI model implementation and developing software solutions. While I may not have expertise in certain technical area, I am always eager to learn, explore new concepts, and continuously improve myself to stay ahead in the field.

EDUCATION

2021 ~ 2023 Master of Science in Computer Engineering

Dongseo University, South Korea

GPA: 4.25 / 4.50

2017 ~ 2021 Bachelor of Electrical Engineering

Petra Christian University, Indonesia

GPA: 3.57 / 4.00

EXPERIENCE

2024-03 ~ 2024-08 Software and AI Engineer Intern, i3 Engineering, South Korea.

Tools: C++, C#, Windows Forms, Docker, Edge Detector, Anomaly Detector.

- Develop backend and frontend s for semiconductor automation machines (laser cutting, sorting, and packaging machines).
- Develop machine vision and anomaly detection algorithm for quality control purposes.
- Assemble and test the finished machine.

2021-09 ~ 2023-08 Research Assistant, Dongseo University, South Korea.

Tools: Pytorch, TensorFlow, ResNet, Vision Transformer, Deep-Q Learning, FaceNet, DARTS, BERT.

- Perform research on several topics including but not limited to Person Re-identification, Neural Architecture Search, Reinforcement Learning.
- Collect training data, conducting experiments, and delivering progress reports.
- Prepare a monthly presentation for progress updates and brainstorming sessions.

- 2019-09 ~ 2021-08** **IoT and Robotics Laboratory Assistant**, Petra Christian University, Indonesia.
Tools: Python, MQTT, Raspberry Pi, ESP8266, ROS, Ladder Logic, SCADA.
- Guiding students through hands-on learning in practicum sessions for several courses (Sensor and Actuator, Microprocessor Systems, Robotics Engineering, and CAD).
 - Maintaining laboratory equipment (CNC, UR3 CB3, Dobot, Duckiebot, 3D Printer, Laser Cutting).
 - Developing IoT, robotics, and PLC projects for laboratory development purposes.
- 2021-01 ~ 2021-03** **Maintenance Technician Intern**, KONE, Indonesia.
Tools: Ladder logic, Safety SOP.
 Performing daily maintenance of elevators and escalators at a shopping center for the safety and convenience of the customers.

PROJECT

- 2022-07 ~ 2023-06** **IMSDO: Deep Metric Learning with Incremental Margin and Standard Deviation Optimization**, Master's Degree Thesis.
Dongseo University, South Korea.
 My thesis focuses on improving the performance of person re-identification and fine-grained image classification models. We propose (1) an innovative concept of incremental margin on triplet loss and (2) feature map's standard deviation optimization, or IMSDO as we called it. Despite its simplicity, IMSDO manage to promote a step-by-step learning process and robustly enhance the feature maps, resulting in superior model performance.
- 2022-05 ~ 2022-06** **Play Atari Game with Reinforcement Learning**, ICATI 2023 Presentation.
Dongseo University, South Korea.
 Train a reinforcement learning agent to play a classic Atari game and present the result at ICATI 2023 Japan conference. The model is developed with OpenAI Gym Retro with a focus on the Implementation of Deep Q-Network (DQN).
- 2020-11 ~ 2021-06** **Support for Pandemic and Epidemic Robot (SPERO)**, Bachelor's degree Thesis
Petra Christian University, Indonesia.
 SPERO is a semi-autonomous robot designed to deliver food and medicine to COVID-19 patients and disinfect rooms. We designed and developed the hardware and software from scratch. The robot operates on Raspberry Pi 4 with Robot Operating System (ROS) framework and equipped with IoT.
- 2019-02 ~ 2020-10** **Hexapod Fire Fighter Robot**, Indonesia Robotic Contest
Petra Christian University, Indonesia.
 I was part of the LIGHT Robotics Team, representing Petra Christian University in the Indonesian Robotics Contest in 2019 and 2020. We designed and constructed an Arduino-based hexapod fire fighter robot. This robot autonomously navigated through a dynamically changing arena, identified and located a fire source, and effectively extinguished it.

ACHIEVEMENT

2nd Place - National Student Creativity Competition (LO KREATIF)

2020-11, Association of Indonesia Private Universities (APTISI 7), Indonesia.

Develop AMS (Application Monitoring System), a system of Android and Windows applications designed to assist parents in monitoring and limiting their children's PC gaming activities. We utilize MySQL Workbench to manage the database and TCP/IP for the communication protocol between devices.

3rd Place - Petra Christian University Student Creativity Program

2020-05, Petra Christian University, Indonesia.

We developed a Smart Compost Bin (SCOMBI), an ESP8266 based trash can that turns organic waste into compost automatically. SCOMBI is equipped with IoT and an Android app so the user can monitor SCOMBI anytime and anywhere from their smartphone.

SKILLS

Programming Languages and Frameworks

Python, PyTorch, TensorFlow, C++, C#, Windows Forms, Robot Operating System (ROS), MQTT, My-SQL, Java, PLC Programming, SCADA, Git, Docker.

Applications

PyCharm, Visual Studio, Putty, WinSCP, Proteus, Autodesk EAGLE, SOLIDWORKS, Android Studio, NetBeans, MySQL Workbench, CX-Programmer, SoMachine Basic, Microsoft Office (word, excel, power-point).

Language

English : TOEFL iBT Score: 72

Korean : KIIP Level 2 (Comparable to TOPIK 2)

ACADEMIC CV ADDITIONS

Research

- Person Re-identification
- Neural Architecture Search
- Reinforcement Learning

Presentation

- Oral presentation in ICATI 2023 Japan
- Presenting my research idea at ETRI Daegu aiming for research collaboration opportunities
- One presentation per month in a lab seminar for 2 years during master degree

Publications

- Winston, J., Kang, D.K. (2023). Empirical Analysis of Data Preprocessing and Reward Shaping for Deep Q Learning in Playing Atari Game. ICATI.
- Winston, J., Kang, D.K. (TBD)*. IMSDO: Deep Metric Learning with Incremental Margin and Standard Deviation Optimization. NCAA. *On submission process

Referees

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Dongseo University