

Jaeyeon Won

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EDUCATION

The University of Texas at Austin — Austin, TX
Bachelor of Science in Electrical and Computer Engineering
GPA: 4.00/4.00

Class of 2027

Relevant Coursework: Circuit Theory, Embedded Systems, Discrete Mathematics, Data Structures

EXPERIENCE

Undergraduate Research Assistant under Dr. Sangmin Yoon

May 2025 – August 2025

Kookmin University – Seoul, South Korea

- Researched and evaluated **core AI architecture**, including **CNNs, RNNs, Transformers, and GANs**, to evaluate their applicability in language comprehension and reading disorder detection.
- Built a **prototype dyslexia detection system** that integrated **eye-tracking** and **speech-to-text** with the **OpenAI API**, and developed an **ML pipeline** for classification; validated with **80+ undergraduate participants** and achieved **~85% classification accuracy**.

Communication/Signal Squad Leader & Interpreter (E-5) – Pohang, Korea

Jun 2023 – Dec 2024

- Led the communication team to ensure secure battalion-wide signal operations and served as interpreter during ROKMC-USMC joint exercises, facilitating real-time collaboration.

PROJECTS & LEADERSHIP

Dystrace — Dyslexia Screening Web Platform

- Designed and implemented an **end-to-end system** (Flutter Web + FastAPI) for dyslexia screening that integrates **speech processing, eye-tracking, and comprehension testing**, enabling multimodal data capture from **80+ participants**.
- Implemented backend with **Whisper ASR** and **Levenshtein similarity** for reading accuracy, and automated **personalized passage & question generation** using the **OpenAI API**.
- Engineered a **data pipeline** (WebGazer.js gaze metrics, STT transcripts, and comprehension scores) into **Firebase/Firestore**, and developed an **ML workflow (feature extraction, hyperparameter tuning, Random Forest classifier)** to model dyslexia risk.

Debug Invader — Embedded Systems Final Project

- Developed an arcade-style game on the TI MSPM0G3507 LaunchPad with ST7735 LCD using C and ARM assembly.
- Implemented timers, ADC slide-pot, UART, and interrupts to achieve **real-time input/output with <1 ms response latency**, enabling accurate collision detection and dynamic enemy spawning.
- Integrated **hardware interfacing with software design**, demonstrating low-level debugging and embedded systems proficiency.

ROKMC Start-up Challenge Competition - South Korea

Mar 2024 – Aug 2024

Team Leader

- Placed **3rd in the ROKMC Start-up Challenge** among 20+ competing teams, advancing to the Ministry of National Defense Competition.
- Led a 3-person team to draft and present a **business plan**, and developed a meal-matching app with **Flutter/Dart** (user profiles, matching algorithm, location-based features).

Luck game and Discussion Battle – Google Play Store

June 2023 – Aug 2023

- Published two Android apps (mini-games + community) with **Kotlin and Android Studio**, demonstrating mobile **UI and backend integration**.

SKILLS

Programming: C, C++, Python, HTML, Java, CSS, JavaScript, Dart, Swift, WebGazer, Machine Learning (CNNs, RNNs, Transformers, GAN)

Languages: English(fluent), Korean(fluent)