Frederick Seo

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Skills

- Java | Python | JavaScript | HTML 5 | CSS 3 | MySQL | PostgreSQL | Node.js | Express | React | jQuery | Flask | Redis | Docker | Git
- AWS | Event-Driven Programming | OOP | Amason S3 | Amazon EC2 | AWS Step Functions | AWS Lambda | Serverless Computing
- Microservices | Frontend | Backend | Full-Stack | English, Korean – *Professional proficiency or above*

Experience

Software Engineer, Intern **NEXTLab** *Seoul, South Korea* **10/2022 - 12/2022**

- Worked in the IAS(Intelligent Automation Service) team to develop AI-based service..
- Was a part of the PlantyM - NewsPaper OCR project, an **event-driven microservice** that runs serverless on the **AWS** cloud, using the latest technologies of **AWS**, **Amazon S3**, **AWS Step Functions**, **AWS Lambda**, **Node.js**, **Docker**, **PostgreSQL**, **Redis**, and **Express**.
- PlantyM - NewsPaper OCR project uses different deep learning AI modules with **Computer Vision** and **Natural Language Processing** to recognize images and text to make an automated e-newspaper service.
- Involved in...
  - Implementing **event-driven** architecture code.
  - Enhancing and evaluating AI modules.
  - Creating and implementing multiple algorithms and data structures that group and categorizes news articles efficiently.
  - Building **RESTful API** using **Node.js.**
  - Building, testing, and deploying applications quickly through **Docker** containers.
  - Running containers and code on the cloud, providing a serverless, event-driven compute service using **AWS Lambda.**
  - Building serverless workflows pipelines using **AWS Step Functions.**

Assistant to drill instructor, Sergeant **ROK Army** *Gangwon-do, South Korea* **08/2020 - 02/2022**

- As an assistant to the drill instructor, it was my duty to train and teach trainees basic army knowledge and give basic army training.
- As a squad leader, it was my duty to lead conferences and settle problems and complaints of my squad at our unit.
- Created and implemented an automated process of updating the gun bulletin board.

Projects

- **Abandoned Dog:** Designed and developed an award-winning web service application Abandoned Dog at KAIST in Seoul **(09/2022)**
  - Abandoned Dog is a **recommendation system** web service application that uses the South Korea Ministry of Agriculture's Animal Protection Management System's Open API of abandoned animal information to recommend the abandoned dogs fit for the users in South Korea.
  - The frontend of the web service application was used with **HTML 5**, **CSS 3**, and vanilla **JavaScript** with the use of **BootStrap** and **jQuery,** and the application's backend server uses **Python** and **Flask** with **PyMySql** to connect to the **MySQL** database and retrieve approximately **270,000** abandoned dog data.
  - The **Flask** server and **MySQL** database run on the cloud with the help of **Amazon EC2** and **Amazon RDS**.
  - A **CNN** model **KoNLPy** was used to determine which breed the abandoned dogs in the local shelter belonged to along with an **NLP** model to match the personalities of the abandoned dogs and the users.
  - **CBF (Content-based Filtering)** was used to provide an accurate match between the users and the abandoned dogs from the survey received from the users through the web application and the information of the abandoned dogs from the shelters that are operated and managed by the South Korea Ministry of Agriculture's Animal Protection Department.

Education

Bachelor of Science **University of Wisconsin-Madison** *Madison, WI, USA* **08/2019 - Current**

- Major in Computer Science
- Current Sophomore

IB Diploma **Gyeonggi Suwon International School** *Suwon, South Korea* **08/2008 - 06/2019**

- IB (International Baccalaureate) Diploma, **(degree received on 5/30/2019)**

Awards & Certificates

- **1st Place Award**: Won 1st place for the development of Abandoned Dog at KAIST in Seoul **(09/2022)**
- **Certificate of 2022 Special AI Academy Program**: The certificate of completing KAIST's software engineer program **(07/2022)**
  (Funded by: Seocho-gu office & KAIST)