Minsu Sun

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Education

POSTECH (Pohang University of Science and Technology) *Feb 2022 – (Expected)Feb 2024*

- Majoring in Computer Science and Engineering
- Awarded CSE Global Leadership Program scholarship(Sep 2023)

Skills

Programming Languages	C/C++, C#, Python, Java
Frameworks	Flask, FastAPI, BeautifulSoup4, Selenium
Tools	Git/Github, Docker, AWS, Kubernetes, Helm
Natural Languages	Korean(Native), English(Intermediate)

Job Experience

SHIFT UP *Jun 2024 – Aug 2024*

Intern Backend Engineer of NIKKE

- Worked on:
  - Implementing features of collaborate event mini game
  - Deploying and managing infra
- Skills: C#, Kubernetes, Helm

UnitCompany Inc. *Jun 2022 – Jun 2024*

Part-time Backend Engineer

- Worked on educational service backend development
- Skills: Python, AWS, Docker

UnitCompany Inc. *May 2022 – Jun 2024*

Intern Researcher

- Worked on research about recommendation system and LLM
- Topics:
  - BERT based contents recommendation system
  - LLM Fine-Tuning
  - LLM Prompt Engineering

Projects

Distributed Arduino Calculator *Aug 2024*

Simple Distributed Computing Cluster with Arduinos via I^2C protocol

- Individual project simulating distributed 32bit floating point calculation
- Distributed 32bit floating point(fp32) addition operations with 4 workers(Arduino Uno)
- Approximately took 10 seconds on 400K fp32 addition operations

Sponge *Mar 2024 – Jun 2024*

Educational TCP/IP Development Project Sponge

- Individual project implementing TCP/IP stack on Linux(link)
- Skills: C++

– Additionally implemented SHA256 hash calculation of every frame for debugging and verify purpose

BLARE *Mar 2024 – Jun 2024*

Blended FLARE(Forward-Looking Active Retrieval Augmented Generation)

– Individual research project proposing and implementing blended query formulation method in FLARE(link)
– Topics: NLP, LLM, RAG(Retreival Augmented Generation)

RISC-V CPU *Mar 2024 – Jun 2024*

RISC-V 5-Stage Pipelined CPU with Configurable Cache

– Team project implementing RISC-V 5-Stage Pipelined CPU with Verilog(link)
– Features:
  – Pipelined 5-Stage Execution
  – 2-Bit Saturation Counter Branch Predictor with PHT(Prediction History Table) and BTB(Branch Target Buffer)
  – Multi-way configurable cache based on LRU

B-CARAFE *Nov 2023 – Dec 2023*

Better CARAFE(Content-Aware ReAssembly of FEatures)

– Individual research project proposing and implementing better reassembly methods
– Proposed new reassembly methods with activation functions attached on original reassembly module
– Acheivment:
  – Proposed B-CARAFE(Faster R-CNN + GELU, ResNet-50) - AP: 23.7 fps: 13.25
  – Original CARAFE++(Faster R-CNN, ResNet-50) - AP: 22.5 fps: 12.54
– Topics: Computer Vision, Image Segmentation, CARAFE(Content-Aware ReAssembly of FEatures)

MDEditor *Oct 2023 – Dec 2023*

IntelliJ Real-time Markdown Editor Plugin

– Team project developing IntelliJ plugin(link)
– Developed based on Agile Software Development and Test Driven-Development
– Skills: Java, Git/GitHub
– Main Role: Developer, QA

PintOS *Sep 2023 – Dec 2023*

- Individual project developing educational OS called PintOS(link)
- Skills: C
- Worked on Threading, User Program, Virtual Memory

BaroKey *Oct 2023*

- Team project developing web service(link) introduced at 3rd UniThon Hackathon Track
- Web service supplying user real-time emergency-related issue keywords near user's location
- Skills: Python(FastAPI, BeautifulSoup4, Selenium), AWS EC2
- Main Role: Backend Developer

Arduino MIDI Controller *May 2023 – Jun 2023*

Arduino MIDI Controller for Musical Keyboard

– Individual project implementing MIDI controller for musical keyboard
– MIDI Controller based on Arduino Leonardo with shift registers and matrix-ed switches

RISC-V SRNPU *Mar 2023 – Jun 2023*

RISC-V Based Super Resolution Neural Processing Unit

– Individual project implementing SRNPU with Verilog
– Hardware accelerator dedicated to generate super resolution image based on CNN model
– Processed 128x128 image under 4ms with 3 layers Sim-ESPCN CNN model

– Processed 128x128 image under 10ms with 8 layers SSAI 2021 CNN model

Online Judge Backend *Jul 2022*

- Individual project supplying online judge system application to a company
- Online judge system backend based on Qingdao University's seccomp judger library
- Skills: Python, Docker, AWS SQS