

Mustahid Ahmed

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Residence

Tokyo, Japan

Nationality

Bangladesh

Git Profile

<https://github.com/ahmedmustahid>

Email

amustahid25@gmail.com

Python	+++++	C++20	+++++	C	+++++	Dart/Flutter	+++++	Swift	+++	Javascript	+++
AWS	+++++	Statistics	+++++	Image	+++++	NLP	+++++	Algorithms	+++++	Data	+++++
				Processing						Structure	

Professional Experiece

Pioneer Electronics

Machine Learning Engineer

July 2023 - Present

Sensyn Robotics

Machine Learning Engineer

May 2022 - June 2023

HyperCube Ltd.

Machine Learning Engineer

April 2020 - April 2022

Batton Ltd.

Machine Learning Engineer (Freelance)

Aug 2023 - Dec 2023

AI Idea Lab Ltd.

Machine Learning Engineer (Freelance)

April 2023 - Dec 2023

Self employed

Software Engineer

April 2020 - Present

Projects

Implemented RAG pipeline with LLM for Qualcomm SoC, Pioneer Electronics

April 2024 - August 2024

Designed and implemented end to end RAG pipeline from scratch using faiss and llama.cpp. Created separate library for RAG after deriving llama and embeddings from llama.cpp. Implemented build system using Conan. CI CD using github action.

C++ Conan git faiss llama.cpp

Designed end to end middleware system for automotive radar, Pioneer Electronics

August 2023 - March 2024

Implemented API to that obtains sensor data streams and transfers them to machine learning module to deliver inference results back into an alarm sytem. Implemented lock free ring buffer system that stopped data loss and enabled extremely fast inference. Employed unit tests and CI CD.

C++ CMake git CI/CD

Crack segmentation from tiles, Sensyn Robotics

Feb 2023 - April 2023

Implementing model for crack segmentation using novel transformer based segmentation architecture inspired from retinal vessel segmentation in medicine literature

Python Pytorch OpenCV mmcv

Analog gauge reading by computer vision, Sensyn Robotics

November 2022 - April 2023

Constructed model for accurately reading the analog gauge by determining the position of the dial, minimum and maximum values from the face of the scale after applying perspective transformation. Squeezed the model into smaller size by quantization in C++ and then deployed it into jetson nano.

Python Pytorch OpenCV onnx mmcv Apache TVM ncnn

People detection from fish eye images, Sensyn Robotics

May 2022 - July 2022

Because commonly used algorithms are not suitable for fish eye images, implemented new algorithm that can detect people in such images by including information of angular values of slanted bounding boxes.

Python Pytorch OpenCV

NLP based Chatbot, HyperCube Ltd.

June 2021 - October 2021

Model deployment, system design and maintenance using AWS Amplify, AWS Api Gateway, AWS Lambda, AWS Sagemaker.
Front and backend development using Flutter/Dart/Swift programming languages.

AWS Dart/flutter Swift Docker Git

Database design and deployment, HyperCube Ltd.

March 2021 – May 2021

Designed MySQL database schema and deployed it in Azure.
Using web application API to connect web app with the database.

MySQL Azure Python Git

Designed novel algorithm for OCR of Japanese fax documents,Batton Ltd.

Aug 2023 - Dec 2023

Collected and labelled dataset of fax documents containing tables. Implemented novel algorithm to extract its data and obtained 97% accuracy.
Dockerized the model and created http endpoint using torchserve. Deployed the docker container into GCP Artifact registry and created inference endpoint through Vertex AI endpoint.

Python Pytorch torchserve OCR Docker GCP

Japanese kanji generation from a specific font,AI Idea Lab Ltd.

April 2023 - Dec 2023

Used controlnet and prompt engineering to create Kanjis from novel fonts.
Creating frontend using Gradio.
Creating fastapi endpoint.
Connecting gradio frontend with fast api

Python Image Generation FastApi Gradio

GPT based AI Callerbot,AI Idea Lab Ltd.

AI Idea Lab

Converting caller's speech into text and using prompt engineering to obtain the best output from Open AI api.
Converting the api response into voice. Exchange the generated voice from python to node.js using WebRTC.

Python Node.js

Memorize: A game for training memory,Self Employed

June 2021 - Sep 2021

Designing front end and game logic in Swift programming language.

Swift Git CI/CD

amusta-chain: A distributed peer to peer blockchain, Self Employed

June 2021 - Sep 2021

Employed end to end TDD.
p2p mining; Implementing transfer of currencies to user wallets;
Validation of transactions by miners.

javascript Express Node.js Git CI/CD

Education

Tohoku University

MSc, Particle Physics [2018 - 2020]

Tohoku University

BSc, Physics [2014 - 2018]

Tokyo University of Foreign Studies

Associate Degree, Japanese [2013 - 2014]

Research

Masters Thesis Machine Learning, Deep Learning, Data Analysis

Simulation of particle collisions and their reaction in particle detectors using C++.
Designing particle detectors using C++ framework.
Analyzing data read by particle detectors using machine learning and deep learning algorithms.

Python OpenCV PyTorch C++ Git CMake

Conference Presentation: Japan Physical Society Annual Meeting

Full Detector Simulation of Pair Monitor and Application of Machine Learning to Determine
Determine Beam Size
Nagoya University, Nagoya, Japan [March '20]

Conference Presentation International Workshop on Future Linear Colliders

Search for weakly interacting dark matter in the International Linear Collider
University of Texas, Arlington, Texas, USA. [Oct '18]

Languages

English, Business Level, TOEFL iBT 110
Japanese: Business Level
Bengali: Native Level

MOOCs

- [Deep Learning Specialization](#): Coursera, Stanford Online
- [Algorithm Specialization](#): Coursera, Stanford Online

- [GAN Specialization](#): Coursera, Stanford Online
- [NLP Specialization](#): Coursera, Stanford Online

Categories: Python C++ Algorithms Deep Learning