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Natthanan Bhukan

Education

Department of Computer enginnering, King Mongkut's University of Technology Thonburi Bangkok, Thailand

B.Eng. in Computer Engineering 2018 - 2022

- GPA: 3.82/4.00, First-class honor
- Ranking at 500-550 in Engineering and Technology by QS Ranking
- Work with Dr. Kharittha Jangsamsi, King Mongkut's University of Technology Thonburi, and Mr. Anuwat Chamnan, Dynamic Intelligence Asia, to research *the software for reading digital measurement tools and managing data* for my thesis project.
- My main responsibility in the thesis project is developing and optimizing a computer vision model to capture data from measurement tools. As a result, this model performs inference speed from around 1000 ms to nearly 400 ms on mobile devices by using NCNN and custom pre-process logic with C++.

Research Experience

Chulalongkorn Yniversity | Bangkok, Thailand 2022.07 - 2022.12

Optimize and deploy the tuna grading system by using the Twing Transformer.

- Working with Dr. Punnarai Siricharoen to optimize the transformer model by using the ONNX framework and deploying it in cloud infrastructure. With an optimization framework, the model infers faster by 15 percent.
- Design a system that handles a large load from the tund grading machine by using the publish-subscribe pattern, and thereby this system handles 30 requests per second with only 4 CPU cores.

Industry Experience

CJ Express Group Ltd. | Bangkok, Thailand 2022.12 - Current

Machine Learning Engineer

- Develop a machine learning platform to allow AI researchers and data scientists to deploy machine learning in cloud infrastructure, which helps users to deploy new models from web applications. This system is implemented by using Google Cloud Provider, Kubernetes, Ray, and Crossplane.
- Optimize a computer vision model for checking if stock arrangement in the shelf is correct by using ONNX and parallel programming, which is deployed in Google Cloud Provider with a publish-subscribe pattern. As a result, this system can handle 50 requests per second with CPU.
- Develop an end-to-end machine learning pipeline for a route optimization system in the logistic platform; as a result, this system could save around 10 percent per year by using GCP Workflow, Batch Service, and Pub/Sub.
- Develop a data pipeline for a credit scoring system in a short loan system by using the GCP Batch service and Cloud function.

Dynamic Intelligence Asia | Bangkok, Thailand 2021.01 - 2022-11

AI Engineer

- Develop computer vision model that inference in real time to detect human satey from the camera's factory by publish-subscribe pattern. Also, deploy model with TensorRT and preprocess with CUDA to maximize GPU utilization which increase speed performance by 2 times
- Develop, deploy, and provision infrastructure for the AI Computer Vision model to integrate with another service for solving a business problem by using Docker, Terraform, and GitLab CI/CD, which these tools implement based on the DevOps concept by using Azure as a cloud provider.
- Involve part of the exam for auditing ISO 29110 Software Engineering for the company.

Publications

- Punnarai Siricharoen, Supanut Tangsinmankong, Seree Yengsakulpaisal, **Natthanan Bhukan**, Wisawapan Soingoen, Yutthana Lila, Saranya Jongaroontaprangsee, Stefan Mairhofer. *Tuna Defect Classification and Grading using Twins Transformer*. To appear in Journal of Food Engineering, Being review.

Awards and Honors

- **Qualify for level two in Super AI Engineer (Season One)**, Artificial Intelligence Association of Thailand 2020.12
- **The first place of Thai MNIST Classification in Super AI Engineer Level One (Season One)**, Artificial Intelligence Association of Thailand 2020.11
- **First round pass with SayHouse : Monitoring and forecast utility usage by using RNN**, National Software Contest 2020 2020.01
- **Department of Computer enginnering Scholarship**, King Mongkut's University of Technology Thonburi 2018 - 2022

Public speaking event

- **Explore the Power of KubeRay on Google Kubernetes Engine**, Google DevFest Cloud Bangkok 2024 2024.11
- **Monitoring and Observability in LLM Application**, GenAI Engineer Thailand 2022.06
- **Leveraging Ray and Vertex AI for LLMOps**, Google DevFest Cloud Bangkok 2023 2023.12

Certificate

- **Certified Kubernetes Application Developer**, The linux foundation 2024.09
- **Professional Cloud Architect**, Google cloud, 2023.12
- **Computer vision nano degree**, Udacity 2021.07

Projects

Side project about CUDA programming
YOLOv11 with CUDA and TensorRT 2022.06 - 2022.12

- Provides a high-performance implementation of YOLOv11 object detection using TensorRT for inference acceleration and leveraging CUDA for preprocessing and inference.
- Using CUDA programming to create a preprocessing logic with CUDA streams and threading, and thereby each input file process on separate CUDA streams. Also, model deploy by using TensorRT. As a result, the process run faster by 4 time to 20 ms

A open-source contributor at Langfuse
Langfuse: Open Source LLM Engineering Platform 2020.08 - 2020.12

- Add KeyCloak authenticate option for Langfuse
- Deploy into production at version 2.93.3

CPE327 Software Engineer with Dr. Phond Phunchongharn and Dr. Khajonpong Akkarajitsakul
Stylelearn : A learning platform which their own desire 2020.08 - 2020.12

- Deverlop a web application by using software engineer prnciple
- Understand software development life cycle

Google Hackathon
WhereToBin : A AI driven system for clasify garbage 2020.08 - 2020.12

- Deverlop a computer vision mdoel that can classify garbade by using YOLOv3
- Optmize and deploy model by using TensorFlow.Js reduces the latency of the inference time from 1500 ms to 1000 ms

Other Experience

King Mongkut's University of Technology Thonburi | Bangkok, Thailand 2022.01 - 2022.05

Teacher assistant in image processing and computer vision (CPE463)

- Help students to clarified their question from lecture
- Be a lab advisor in each class

Botnoi Consulting Co. Ltd. | Bangkok, Thailand 2020.06 - 2020.12

Teacher assitance for Data Science Essential class

- Help students in the class to provide a suggestion for a project each week
- Answered questions and clarified miss-understand knowledge to student
- Classes Topics : 1. Data Analytics 2. Machine Learning 3. Prediction Models 4. Trend Forecasting 5. Customer Segmentation 6. Contextual and Personalise Marketing 7. Recommendation System 8. Anomaly and Fraud Detection

Community Involvement

KMUTT BangMod Hackathon | Bangkok, Thailand 2021.10

Backend Developer for a programming competition platform

- Deverlop a programming competition platform in Golang

KMUTT RC Volunteer Club | Bangkok, Thailand 2020.01

Leader Modpa ViVa Rasa 1

- This camp is three days long to create wildfire protection.
- Being a leader of this project, I need to plan and set it up, and also my team can raise funds for this project, 550 USD from the public, to support this project.