

# CHEN-YI HUANG

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黃晨懿

Certified Kubernetes Administrator, dedicated software engineer, persistent learner and enthusiastic open source contributor. Experienced building server and Kubernetes monitoring architecture, Kubernetes cluster administration, and large-scale software code reading and tracing. I'm honored to received the Arctic Code Vault Contributor at GitHub and give short talks about Kubernetes metrics at K8s summit in 2021.

## Skills

Observability	Prometheus, Grafana, Server & Kubernetes monitoring, Loki, Promtail
VM, Container	Kubernetes, Docker, Linux SysAdmin, Nvidia Cloud-Native GPU support, Proxmox
Programming	Python, Rust, C, Golang, PromQL
Networking	TCP/IP, Wireshark, Chrome DevTools
CI/CD	Ansible, Github Actions, Azure Pipelines
Language	Chinese (native), English

## Work Experience

- May 2021–Present **Senior Engineer**, INTELLIGENT BANKING DIVISION, E.SUN BANK *Taipei, Taiwan*.
- Built, enhanced, and promoted comprehensive monitoring and alerting architecture on **hundreds** of servers, accumulating up to **1.5 million** series per environment.
  - Multi on-premise, total up to **40** nodes k8s clusters administration, migration experience in
    - Development for data analysis, training (AI Cloud) with **95%** SLA level.
    - Production API for model inferencing (MLaaS) with **99%** SLA level.
  - Experienced CentOS-based Linux SysAdmin, VM orchestration with Proxmox, and Nvidia Cloud Native GPU environment support.
  - Coordinated with colleague to instrument system observability, write Ansible playbooks, Kubernetes and network troubleshooting.
- Oct 2020–Jan 2021 **Engineer**, COMPUTER INTEGRATION MANUFACTURER, TSMC *Hsinchu, Taiwan*.
- Responsible for developing the agent and reporting APP for **thousands** of users in FAB.
  - Developed the web crawler to download **hundreds** of candidate resumes and general resume parser which achieved up to **95%** extracted information accuracy.
  - Wrote integration-test under possible scenarios and detailed documents including building procedure and class diagram for senior's project.
  - Pioneer of Robotic Process Automation and efficient i18n support for reporting APP.
- July 2018–Jan 2019 **Web Developer**, CS COMPUTER CENTER, NCTU *Hsinchu, Taiwan*.
- Developed web services for **hundreds** of CS students, especially for Account Application System.
  - Cooperated with teammate to discuss and design the suitable database schema and API routing.
  - Participated and learned modern software development including testing, deployment, virtualized environments and CI/CD.

## Education

- 2018–2020 **Master of Data Science**, *Institute of Data Science & Engineering*, National Chiao Tung University, Hsinchu, Taiwan.
- 2014–2018 **Bachelor of Science**, *Department of Computer Science & Engineering*, Yuan Ze University, Taoyuan, Taiwan.

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## Open Source Contributions

- Found the redundant calculation of derivative of power function in various deep learning frameworks. @ PyTorch, JAX, Autograd
- Provide the HTTP delivery for forwarding article in BBS @ Ptt-Backend
- Data serialization and deserialization in Golang @ go-bbs
- Improved and beautified one of the example @ Yew
- Developed some code to be more Pythonic. @ TensorFlow
- Bug reporting @ Python extension for Visual Studio Code
- Participation of issue discussion. @ Windows Subsystem for Linux

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## Talks & Slides share

- Dec 2021 **The Journey to the Kubernetes metrics @ Kubernetes Summit 2021.**
- May 2019 **Buddy System.**

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## Projects

- May 2022 **DCGM exporter extended for aliyun gpushare.**
- Support aliyun gpushare-scheduler-extender in Nvidia dcgm-exporter
  - Provide k8s GPU instrumentation, monitoring solution in **memory usage (MB)** level
- March 2021 **Web Assembly rendering in Rust Playground.**
- Rendered and displayed Web Assembly from compiled Rust code.
  - Support both Rust Playground (React) and mdBook (native JS) frontend rendering
  - Support various wasm crates including wasm-pack, yew etc.
- June 2020 **Real-time Traffic Anomaly Detector.**
- Anomaly detection in NCTU administration networks.
  - Designed and implemented the data pre-processing pipeline with Apache Kafka, Spark and MongoDB.
  - Processed data-stream in real time up to **30 kB/sec** and transformed into feature vectors to further predict.
- Sep 2019 **AutoDiff from Scratch.**
- Simple neural network library supporting auto-differentiation
  - Reported an issue and solved it in various deep-learning libraries during the development.
  - Enabled high-level layer usage and had already tested on real-world dataset.

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## Master thesis

- Title *Solving Traveling Salesman Problem with the Kernel-enabled Attention*
- Supervisor Shi-Chun Tsai
- Description We built on top of the prior state-of-the-art work who borrow the Transformer to solve the TSP. Motivated by the implicit dot product inside the kernel methods, we replace the scaled dot product with kernel in the attention mechanism. In our experiment, we archive shorter tour with a similar approach.

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## Certification & Award

- Certified Kubernetes Administrator (CKA)
- Arctic Code Vault Contributor @ GitHub