SHENG-YEN CHOU

Be Ambitious

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PUBLICATION

Adversarial Data Synthesis Based on Neural Tangent Kernels

Datalab

2021

- We derive a new single level objective from the bilevel optimization problem of GANs to stabilize the training process based on the Neural Tangent Kernels (NTKs), which formulate a closed-form approximation.
- Our method GA-NTK can **generate competitive images with only 64 ~256 training images in comparison to SOTA GANs.**
- Under submission

EXPERIENCE

Research Assistant

Datalab(Supervised by Prof. Shan-Hung Wu)

Feb 2020 – Present | Hsinchu, Taiwan

- Engage in machine learning researches and focus on neural tangent kernel and related applications.
- Join distributed database researches and aim to build an auto-tuning distributed database system with machine learning techniques. I also wrote the **prototype of the "DependencyAnalyzer" component for the open source database projects: VanillaCore** and **reproduced some experiments of the paper MB2: Decomposed Behavior Modeling for Self-Driving Database Management Systems in the open source database project: ElaSQL.**
- 3 paper under writing.

IOC Maintaining Engineer and PM (Expatriate)

ChingPiao

Jan 2019 – Feb 2019 | Taipei, Taiwan

- Build an online rental service running at Liu-Qui island to replace disposable cups for Pingtung county government. Coordinate with the partner IT company of Liu-Qiu Cup online rental service, engage in system development and, maintain the rental service. **We've achieved 1000 membership within 1.5 months and 200 daily usages.**
- Official page

Business Development / Software Engineer Internship

Vexanium

Jul 2019 - Aug 2019 | Jakarta, Indonesia

- Engage in Indonesian and Taiwanese market researches and propose a product design strategy for Dapp. Analyze users' favors for VexGift. Build a Dapp Demo for the Vexanium chain which can upload the article to the blockchain once it is published.
- Project Page

CAREER OBJECTIVE

Entrepreneur and enthusiast in machine learning and large-scale systems.

EDUCATION

B.S. Computer Science

National Tsing Hua University

2017 – 2022 | Hsinchu, Taiwan

SKILLS

C++ | Python | Matlab/R | Java | HTML/CSS/JS/Node | React/React Native | Flutter | Native Android | Docker/Kubernetes | PostgreSQL | Unix/Bash | Web3/EOSJS/Solidity | Google Cloud | Tensorflow/PyTorch/Jax | Numpy/Pandas/Scikit-learn | MPI/POSIX/CUDA

Adobe XD | Project Management | Business Development | Market Research | Motivator & Leader

HONORS

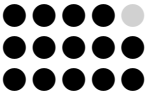
Award
2019 - Our start-up LEAFHOPPER.IO enrolled into **6th NTHU Garage**

Award
2019 - Our start-up LEAFHOPPER.IO enrolled into **NTUST Micro Accelerator**

Award
2019 - Our start-up LEAFHOPPER.IO won the **3rd place of 7th NTHU ENTREPRENEUR DAYS**

LANGUAGES

English
Mandarin
Taiwanese



PROJECTS

Implementation of 2V2PL

- Implement the **2V2PL concurrency protocol on VanillaDB with Java.**
- We **improve the throughput by 5 times compared to S2PL at most in TPCC workload**
- Project Page

DRL Collection

- A collection of implements of classical DRL algorithms. It contain modular implementations of **A3C, A2C, DDQN, and REINFORCE(naive) with Tensorflow2.0.**.
- Project Page

Blocked Floyd Warshall With CUDA

- Solve all pair shortest path problem with **Blocked Floyd Warshall algorithm** and parallel on **GPU with CUDA in C++.**
- Project Page

EfficientDet

- An **EfficientDet implementation in TF2.0** based on the paper EfficientDet: Scalable and Efficient Object Detection on CVPR'20.
- Project Page

ML Collection

- Implementation and derivation of ML algorithms in **R or Python**, including **SVM and VBGMM.**
- Project Page

Mandelbrot Set Generator

- Generate Mandelbrot set with **MPI, Pthread, SSE, and AVX in C++.**
- Project Page

EXTRA-CURRICULAR ACTIVITIES

Co-founder / Engineer / BD

LEAFHOPPER.IO

May 2019 - Dec 2020 Hsinchu, Taiwan

- We've **cooperated with the Lu-Gu township government**. We want to deploy micro weather sensors on the tea farm and **create immutable traceability for Dong Ding Oolong tea**. We've invited to hold a open tender valued 2 million NTD.
- I lead a team of 7 people and negotiated with local farmers. I also built up a tea traceability system with **PostgreSQL, React, and K8s.**
- Official Page

Project Leader

Campus Delivery Project(partner Ching Piao)

Sep 2018 - Dec 2018 Hsinchu, Taiwan

- I lead an 8 people execution team and build a campus delivery service. We've collected **250+ polls as the market survey in NTHU.** This project became the Green Pepper Delivery and **it served 100 people every day.**
- Project Demo