李念祖 Nien-Tsu Li

Passionate about pursuing abilities and self-learning, I enjoy practical implementation and the process of solving problems. I consider myself flexible and fast learner. I have self-taught deep learning and IoT, and I was able to fully demonstrate my research enthusiasm during my Master's degree.

Email ： s07362022@gmail.com
github Youtube Channel Medium Linkdln

Education

2022.09 - until now National Cheng Kung University - Master of Electrical Engineering

Experiences

Teaching Assistant：

- Python: Data process
- IOT Project manager
  - Industrial safety and helmet detection equipment with AI gate
- AI Project manager
  - Detecting vehicle flow for intelligent traffic lights at large intersections in smart cities

Research Paper Publish：

- Published in: IEEE Transactions on Artificial Intelligence (TAI) , 'Domain-Centroid-Guided Progressive Teacher-based Knowledge Distillation for Source-Free Domain Adaptation of Histopathological Images'

Work Experience：

- 2020.05-2022.06 ai4kids - teacher/ speaker
  - Machine Learning
  - Deep Learning
- 2022.07 AUO Corporation - soft Engineer(intern)
- 2023.07 Synopsys - PAE (inter)

National Competition：

- 2021 Practical Competition on IOT - TOP 10
- 2021 Institute of Higher Education Mechatronics Innovation & Creative Intelligence Practice Competition
- 2022 Intellectual Innovation and Cross-domain Integration Creative Competition of National Colleges and Universities

Skills

Big Data Analysis：

About one year of experience using Pandas, Numpy, and Matplotlib to analyze government open data.

- Analysis of traffic accidents in Taichung City over the past decade

Deep learning：

About three years of experience in image classification, object detection, and object segmentation in deep learning, as well as image preprocessing methods in the field of imaging.

- Keras

Semiconductor manufacturing process：

Nanoscale semiconductor manufacturing is my area of expertise in university. I have experience simulating transistor

    - Analysis of accident-prone intersections and the presence of surveillance equipment
- Analysis of rainfall over the past decade
    - Daily, monthly, and yearly average analysis
- Analysis of air quality in Taichung over the past decade
    - Analysis of AQI index at each monitoring station

- Tensorflow
- Pytorch

manufacturing processes and conducting process experiments.

- Laser annealing process
- Deposition process
    - PVD coating
- Tcad-tsuprems
    - CMOS
- Hspice
- Pspice

Python：

About three years of experience using languages for data processing, deep learning, web servers, databases, and integrating systems.

- requests
    - web crawler
- Flask(web server)
    - Back-end web servers
- SMTP Server
    - E-mail
- Django
- Pandas,Numpy,Matplotlib
    - Data processing and analysis
- Opencv
    - Image processing/image rotation correction
    - Gaussian filter, binarization
    - Web streaming real-time frames
- Leetcode

IOT/Linux/Server：

About two years of experience applying machine learning models to development boards in addition to sensors, and researching cross-platform and acceleration optimization systems.

- Raspberry Pi
    - GPIO and senser app
- Jetson Nano/NX
    - Implementing AI models for use on edge devices
- MQTT
    - Communication protocols for image and data transmission
- influxdb (No sql)
    - Using the characteristics of IOT to access data in a non-relational database structure for optimal efficiency
- MySQL
- HTML/CSS
    - Registration and login to a website
    - Web streaming real-time frames
- Shell script
    - Packet transfer script

EDA：

During my internship, I independently developed several scripts and algorithms using Python and TCL for ICC2 tool.

Placement & Rounting

- ICC2 - Boundary and Tap Cell Test with Complex Placement Blockage
- ICC2 - Pattern-based boundary cells checker
- ICC2 - Boundary Inset Region Checker

Research focus

- Web
    - Back-end
    - Database
- Deep learning
    - Domain Adaptation
    - Semi-supervised

- Machine Learning
- IOT
  - Edge device Applications：Jetson Nano/Nx，Raspberry Pi
- EDA
  - Placement & Routing
  - APR flow