Wenchang Liu

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Education

University of California, Davis, CA, USA   2021/09 – Present

M.S. in Computer Science (CS), TA of ECS174 Computer Vision(Spring 2022), Current GPA: 3.95

The University of Manchester, Manchester, UK   2018/09 – 2020/07

B.S.(Hons) in Artificial Intelligence (AI), 2+2 Exchange Program, GPA: 82.5/100
Achievements: First Class Honours Degree, Certificate of Excellence Award (Top 10%)

Huazhong University of Science and Technology, Wuhan, China   2016/09 – 2020/06

B.E. in Computer Science and Technology (CS), 2+2 Exchange Program, GPA: 3.6/4.0

Experience / Projects

TikTok/ByteDance - SDE Intern   Mountain View, CA, USA   2022/06 – 2022/09

Byted-Torch Training Performance Optimization with torch.fx

- Captured patterns of operations in nn.Module and replaced them with optimized ones using torch.fx
- Conducted unit/end2end tests for Visual Transformers, ResNet_v67 and VLBert models
- Speed up more than 500% of the end-to-end training for the BES audit task

Byted-Torch Profiler Development

- Conducted a survey and overhead tests for the current torch.profiler
- Added a feature to correlate CUDA ops to nn.Module to know which are the time-consuming ops

Tsinghua University - Research Assistant   Beijing, China   2020/09 – 2021/07

Reliable Wiki Knowledge Graph Construction with Probabilistic Weighted Links

- To make better use of the hidden knowledge in the internal links of Wikipedia that are often overlooked by the traditional KGs, we constructed a reliable KG by extracting pages as the nodes, pagelinks as edges, calculating TF-IDF as the relatedness weights for each edge, and filtering edges with knowledge embedding algorithms
- Built a front end visualization tool of the KG for debugging and demonstration
- 2nd authored paper (WenMai - A Probabilistic-Like Association Reliable Chinese Knowledge Graph) has been accepted by CCKS2021 conference (with Wenhao Li, Maosong Sun, Xiaoyuan Yi)

Final Year Project - Undergraduate   Manchester, UK   2019/11 – 2020/05

Image-to-Image Translation Using Generative Adversarial Networks

- Trained PyTorch GAN models, Pix2pixHD and SPADE, on Google Colab for photorealistic image translation from segmentation maps
- Applied the models to a smaller scale dataset and achieved decent result using less than 1/8 GPU resources to train
- Built a web demo using Flask and JavaScript that allow users to draw maps and try image transaltion in real-time

VMware - MTS Intern   Beijing, China   2019/06 – 2019/08

Math Knowledge Graph Web App

- Clustered 25 classes of relations from more than 2000 sections of Wikipedia data using KMeans
- Manually labeled middle school math knowledge data in RDF triples format to build prototype demo
- Built Web App Demo with the Flask back end framework and the Echarts visualization tool

Undergraduate Team Projects - Undergraduate   Manchester, UK   2018/09 – 2019/12

Kalah Game AI Bot (with other 2 students)

- Built agents that can play the board game Kalah(Mancala)
- With the trick of hardcoded the first 3 steps, our Alpha-beta Pruning agent runs at least 100% faster than before
- Our bot won the course's final tournament (ranked 1st)

Skills

- Languages: Python, C, HTML, CSS, JavaScript, SQL, Java
- Frameworks: Scikit-Learn, Flask, PyTorch, Spring, React(Hooks), Vue, TailwindCSS, Spring, WindowsForm
- Tools: Git, Jupyter Notebook, Latex, Apache, Nginx, Matlab, Jenkins, Docker