XIAOCHEN LU

Shanghai, China | +86 180-2164-2001 | xl3139@nyu.edu | http://nigellu.com

EDUCATION

NYU Shanghai, Shanghai, China   Expected graduation date: May 2023
Major: **Data Science + Business and Finance**   Minor: **Computer Science**
Cumulative GPA: **3.893/4.0**   Data Science Major GPA: **3.96/4.0**

PUBLICATION & PREPRINT

[1] Hanan Salam, Saloni Rakholiya, Jialin Li, **Nigel Lu (my preferred English name)**. Multimodal Online Student Engagement (MOSE) Dataset for Studying Personality and Engagement. *Submitted to the Nuclear Physics B, November 2022*

[2] Li Guo, Haoming Liu, Chengyu Zhang, Yuxuan Xia, **Xiaochen Lu**, and Zhenxing Niu. Boosting Few-Shot Segmentation via Instance-Aware Data Augmentation and Local Consensus Guided Cross Attention. *Submitted to the 2023 IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR).*

RESEARCH EXPERIENCE

Few-Shot Segmentation with Adaptive Data Augmentation and Cross Attention
Research Assistant advised by Professor Guo Li, **NYU Shanghai**   Mar 2022 to Present
- Propose an instance-aware data augmentation strategy to improve support image diversity and reduce distribution inconsistency between query and support images in low-data regimes.
- Incorporate a cross attention module with 4-D dense correlation refined by local consensus constraints to align query and support features for improved generalization ability.
- Set up a neat and re-usable visualization code module to help verify and visualize the results of the proposed model. And build a neat and scalable codebase for few-shot segmentation research in PyTorch.
- Co-author a paper which has been submitted to the conference of **CVPR 2023.**

Multimodal Online Student Engagement Dataset
Research Assistant advised by Professor Hanan Salam, **SMART-LAB NYU Abu Dhabi**   May 2021 to Mar 2022
- Build an online learning engagement detection dataset along with post-class survey results and open to research community.
- Based on PyTorch, OpenCV and OpenFace, establish a CNN-RNN hybrid baseline model for spatial and temporal processing.
- Investigate the correlation between post-class self-evaluation results and personality surveys to provide insights on how personality may relate to engagement level in online learning. Apply various significance tests (e.g., T-test) to verify the potential correlations discovered.
- Co-author a paper which has been submitted to the **Nuclear Physics B** journal in Nov 2022

Evaluating Parameter-Efficient Tuning Methods in Low-Data Regimes
Course Project mentored by Professor Sam Bowman, **NYU Center of Data Science**   Mar 2022 to May 2022
- Reproduce four SOTA parameter-efficient tuning methods based on HuggingFace and OpenDelta libraries. Then evaluate the performance of these methods on various NLP tasks (e.g., sentiment analysis, Q&A, etc.) with different portions of training samples provided
- Verify and conclude that a parameter-efficient tuning method with a larger ratio of tunable parameters generally results in a better performance across NLP tasks, but usually converges slower regardless of the sufficiency of data.

Real-time Object Detection in Autonomous Driving Scenarios
Course Project mentored by Professor Augustin Cosse, **NYU College of Arts and Science**   Sep 2021 to Dec 2021
- Pre-process and prepare CityScape dataset for object detection under autonomous driving scenarios (e.g., remove classes irrelevant to autonomous driving). Then Fine-tune YOLOv3 model on the prepared dataset: by freezing the feature extraction backbone DarkNet53 and fine-tuning the feature pyramid network to better detect what matters in driving situations.
- Achieved a detection frame rate of 42 on personal computer, with a mAP of 49.6% when transferred to images outside CityScape dataset.

WORK EXPERIENCE

Frontend Dev Intern, **eBay Inc.**, Shanghai, China   Sep 2022 to Present
- Harness the power of function based ReactJS, Antd, and Redux to create smooth, user-friendly frontend pages for eBay's cloud console
- Build and enhance eBay's ATB (Average Time to Business) dashboard for real-time monitoring of cluster status and a smoother rollout
- Continuously optimize the frontend codebase and business logic for faster load time, better user experience, and better code readability

Frontend Engineer, **Kaizntree Ltd.**, Hong Kong SAR   May 2022 to Sep 2022
- Established a startup with 3 of my college friends and 4 other employees
- Leverage the power of VueJS and Django's versatility to build a one-stop management system for small businesses. The SPA (single-page-application) we built integrates an all-in-one workflow from raw material purchase to building and selling products (visit Kaizntree website here)

Frontend Dev Intern, **Jiangsu Expsoft Ltd.**, Wuxi, China   May 2021 to Sep 2021
- Build a powerful and easy-to-use system for company/government to manage auditing tasks with a team of 18 people
- Built an NLP segmentation tree API specialized in civil and construction engineering setting, and deployed it as a web application
- Using MobileNetV2 as backbone and Meta's (previously Facebook) DeepFace library, build a two-stage liveness anti-spoofing face recognition model satisfying production standards, and deploy it as a web application with both API and UI.

VOLUNTEER EXPERIENCE

Teacher, **Steppingstones Shanghai**   Oct 2019 to Dec 2019
- Teach English during weekends for a class of 52 elementary-level children of migrant workers in Shanghai
- Prepare each week's course slides, including designing the course to be fun, interactive and coordinating with local teachers

SKILLS & INTERESTS

Languages: Native speaker in Chinese, Working Proficiency in English, with a TOEFL score 110, GRE score 324+4
Coding Skills: Python, JavaScript (ES6), HTML5, CSS3, LaTeX, SQL, Markdown, Git, Linux Terminal
Interests: Cycling, Hiking, Basketball, Consumer Electronics, Computer Networks