

XIAOCHEN (NIGEL) LU

Shanghai, China | +86 180-2164-2001 | x13139@nyu.edu | <http://nigellu.com>

EDUCATION

NYU Shanghai, Shanghai, China

Major: **Data Science + Business and Finance**

Cumulative GPA: **3.89/4.0**

Minor: **Computer Science**

Data Science Major GPA: **3.96/4.0**

Expected graduation date: May 2023

PUBLICATION & PREPRINT

[1] Hanan Salam, Saloni Rakholiya, Jialin Li, **Nigel Lu**. 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)*

WORK EXPERIENCE

Frontend Dev Intern, **eBay Inc.**, Shanghai, China

Sep 2022 to Present

- Build and enhance eBay's ATB (Average Time to Business) dashboard for real-time monitoring of cluster status to facilitate smoother rollouts
- Harness the power of function-based ReactJS, Antd, Redux, and JS Plugin to create smooth, user-friendly frontend pages for eBay's cloud console
- Continuously optimize the frontend codebase and business logic for faster load time, better user experience, and better code readability, including but not limited to componentization of UI parts, reduced number of API calls, and detailed documentation following Google JS Style Guide

Full-stack Engineer, **Kaizntree Ltd.**, Hong Kong SAR

Nov 2021 to Sep 2022

- Established a startup with three of my college friends and four other employees, helping more than 30 small businesses to simplify their workflow
- 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](#))

Deep Learning Intern, **Jiangsu Expsoft Ltd.**, Wuxi, China

May 2021 to Sep 2021

- Build a powerful and easy-to-use system for companies / the government to manage auditing tasks with a team of 18 people
- Use MobileNetV2 as the backbone and Meta's (previously Facebook) DeepFace library to build a two-stage liveness anti-spoofing face recognition model in PyTorch
- Train the model on my pre-processed CIFAR-SURF anti-spoofing dataset and achieve a production-ready accuracy
- Deploy the model as a web application accessible via both UI and API endpoint using Python Flask

RESEARCH EXPERIENCE

Few-Shot Segmentation with Adaptive Data Augmentation and Cross Attention

Research Assistant advised by [Professor Li Guo](#), 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 codebase 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 and submit it 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 and preprocess a new online learning engagement detection dataset with post-class survey results and open it to the 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 and submit it to the **Nuclear Physics B** journal

PROJECT EXPERIENCE

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) 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 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 the CityScape dataset for object detection under autonomous driving scenarios (e.g., remove classes irrelevant to autonomous driving). Then fine-tune the YOLOv3 model on the prepared dataset: by freezing the feature extraction backbone DarkNet53 and fine-tuning the feature pyramid network to detect better what matters in driving situations
- Achieved a detection frame rate of 42 on the personal computer, with an mAP of 49.6% when transferred to images outside the CityScape dataset

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 and interactive, as well as coordinating with local teachers

SKILLS

Languages: Native speaker of Chinese, Working Proficiency in English, with a TOEFL score of 110, GRE score of 324+4

Coding Skills: Python, JavaScript (ES6), HTML5, CSS3, LaTeX, SQL, Markdown, Git, Linux Terminal