**XIAOCHEN (NIGEL) LU**

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**EDUCATION**

**New York University, Tandon School of Engineering**  New York, NY

*Master of Science in Computer Science* **(**Cumulative GPA: 3.88/4.0)May 2025

Relevant Coursework: Big Data, Algorithms, Advanced Database, Deep Learning

**New York University, NYU Shanghai** New York, NY and Shanghai, China

*Bachelor of Science, Data Science, minor in Computer Science (*Cumulative GPA: 3.91/ 4.0) May 2023

Magna Cum Laude; NYU Honors Scholar; Dean’s List 2019-2023

Relevant Coursework: Applied Internet Technologies, Computer Architecture (Objective C), Data Structures (OOP), Databases, Machine Learning (TensorFlow), Natural Language Processing (PyTorch), Data Analytics, Decision Model and Analysis

**SKILLS**

***Coding Languages:*** SQL, R, Python, JavaScript, TypeScript, Java, Objective C

***Software Tools:*** PyTorch, TensorFlow, PostgreSQL, MySQL Pandas, NumPy, SciPy, R Studio, Matplotlib, Seaborn, Scikit-learn, React.js, Vue.js, Django, Express.js, Spring Boot, Maven, JPA, Thymeleaf, Git, Docker, Kubernetes, Chart.js, OpenCV

***Other Tools:*** Circle/Travis CI (CI/CD), AWS EC2/EB/RDS, Agile Dev, Linux/UNIX, Tableau, Office/Google Suite

**RESEARCH & PROJECTS**

**Few-shot Segmentation with Adaptive Data Augmentation and Cross Attention** ([link](https://arxiv.org/abs/2401.09866) to paper on arXiv) **Mar. 2022 - May 2023**

* Proposed an instance-aware ***data augmentation*** strategy to improve support image diversity and reduce distribution inconsistency, boosting model performance by 3.7% in ablation studies
* Incorporated a 4-D consensus cross attention module in ***PyTorch*** to align query and support features, increasing accuracy by 5.4%
* Built a scalable ***PyTorch*** codebase for running few-shot segmentation research experiments ***distributedly*** on computing centers

**Multimodal Online Student Engagement Dataset** ([link](https://wp.nyu.edu/smartlab/engagement-detection-in-online-learning/) to blog) **May 2021 – Mar. 2022**

* Created a 17GB labeled engagement detection dataset of 300+ participants in online learning settings
* Established a CNN-RNN hybrid baseline model to process spatial and temporal signals simultaneously

**Evaluating Parameter-efficient Tuning Methods in Low-data Regimes Sept. 2021 – Dec. 2021**

* Reproduced four SOTA parameter-efficient tuning methods based on HuggingFace libraries
* Evaluated the performance of these methods on various NLP tasks (e.g., sentiment analysis, Q&A) with various train/test partitions
* Concluded with a research paper how to balance performance and converging speed in parameter-efficient tuning

**Real-time Object Detection in Autonomous Driving Sept. 2021 – Dec. 2021**

* Pre-processed and prepared CityScape dataset for object detection under autonomous driving scenarios
* Finetuned YOLOv3 model on the prepared dataset by freezing the backbone DarkNet53 and tuning the feature pyramid network to detect what matters in driving situations
* Achieved detection speed of 42 fps on personal computer, with a mAP of 49.6% when transferring to out-of-domain testing images

**PROFESSIONAL EXPERIENCE**

**eBay Inc.,** Software Engineering Intern – Cloud Infrastructure Team, (Shanghai, China) **Sept. 2022 – Aug. 2023**

* Innovated an Average-Time-to-Business (ATB) dashboard using ***Redux***, ***React.js***, and ***Spring Boot*** to monitor cluster statuses and send checkout alerts, reducing crisis response time by 25% and boosting service availability from 99.14% to 99.8%
* Implemented a predictive analytics model using ***Scikit-learn*** and integrated it to ATB Dashboard to forecast system load and potential downtime, further reducing system downtime by 40%
* Developed a ***SQL-based tool*** for automating anomaly detection by *analyzing patterns and metrics* in eBay’s cloud infrastructure performance data, benefiting 100+ infrastructure engineers by providing predictive insights into system reliability

**Kaizntree Co.,** Co-founder and CTO, (New York, NY and Remote) **Sept. 2021 – Feb. 2024**

* Built a one-stop management solution for small businesses using ***Vue.js****,* ***Django REST framework****,* and***PostgreSQL***, earning 100+ happy customers by reducing their time spent on management tasks from 15 to just 2 hours per week
* Designed and executed a data-driven market analysis strategy using ***Pandas*** and ***Seaborn***, identifying key growth opportunities for customers, resulting in an estimated 35% increase in customer acquisition during the roll-out window of this feature
* Collected and analyzed 1000+ user feedback using ***Pandas*** and adopted ***Scrum Development, Circle CI/CD*** with ***Heroku*** to minimize friction throughout the software development lifecycle (SDLC), enabling Kaizntree to address BUGs under 24 hours
* Spearheaded the ***2-way integration*** between Kaizntree and 4 major sales channels using ***OAuth2*** (Shopify, Square, Etsy, and Xerox) and automated stock & order sync across platforms, putting an end to manual updates and stock inconsistency on different channels
* Won the 2023 NYU Summer Launchpad and 2023 NYUxYale Startup Competition, with a reward of $15,000 non-dilutive funding
* Earned investment from 3 individual investors and received a total of $250,000 investment with Kaizntree valued at 5 million