

# Shiyuan (Eric) Zhou

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## EDUCATION

### University of Toronto (U of T)

September 2019 - May 2023

**Major:** BSc (Honours), Data Science Specialist, Department of Computer Science

**GPA:** 3.87/4.00

**Awards:** Dean's List 2020 - 2023

## EXPERIENCE

### Zhejiang University Institute of Computer Innovation – Automotive Manufacturing CV Team **June 2023 - Present** *Machine Learning Engineer Internship*, (Advisor: Dr. Lintao Zhang)

- By leveraging PatchCore algorithm, system achieved 0.95 F1 for anomaly detection in automotive parts, resolved the need for abnormal images during training, and reduced the training time by 90%.
- Resolved overfitting in the fine-tuned DINOv2 on auto logo detection by image augmentation and adding 0.4 dropout.
- Using SegGPT to help workers quickly find people and items in warehouse surveillance footage.

### BaseBit.ai - Intelligent Medical System **April 2021 - September 2021** *Developer Internship*, (Advisor: Dr. Lintao Zhang)

- Improved matrix factorization model accuracy by 7% using Funk SVD algorithm in recommendation system.
- Assisted in constructing intelligent data services including Data Cleaning, Wrangling, and Visualization.
- Used HTML, CSS, and JavaScript to develop a patent application process website for research team.

## RESEARCH EXPERIENCE

### Peking University – IPP Lab

March 2023 - Present

- NLP Researcher*, (Advisor: Prof. Yinyin Zang)
- Sentiment Analysis on Mental Health related social media posts for Mental Illness Prevention.
  - Report is presented in Chinese Psychological Society 2023 Conference.
  - Retrieved and compared keywords from scrapped social media posts by TF-IDF, TextRank, KeyBERT, LDA, and Yake.
  - Analyzed social platform users' perspectives of mental health services through a Large Language Model (LLM) based on RoBERTa, and concluded that about 30% of users had a negative attitude towards mental health services.

### Purdue University - Interactive Intelligent Systems Lab

May 2022 - Present

- CV and ML Researcher*, (Advisor: Prof. Tianyi Zhang)
- Accepted by KDD 2023: Rapid Image Labeling via Neuro-Symbolic Learning (RAPID: [Github](#)).
  - RAPID achieved more than 80% accuracy in 4 different image labeling tasks, which includes glaucoma detection, bird species detection, etc.
  - Reduced 85% of training data needs during the sensitivity analysis of RAPID via multi-criteria based active learning.
  - Implemented a Python Flask backend server containing APIs for data transmission between layers and database manipulation using PyMongo. The whole system is prepared to be submitted to CHI 2024.

### University of Toronto - FORCOLAB

September 2022 - June 2023

- NLP Researcher*, (Advisor: Prof. Shurui Zhou)
- Aligning Documentation and Stack Overflow through Constrained Decoding with Weak Supervision.
  - Paper is submitted to ICSME 2023.
  - Gathered and augmented training data through web-scraping Python documentation with BeautifulSoup.
  - Achieved 81.8% accuracy using a fine-tuned GPT-2 based model for classifying Stack Overflow posts into Python documentation topics.

## COURSE PROJECTS

### StyleEase – A Fashion Mobile App ([Github](#))

January 2023 - May 2023

## SKILLS

**Languages:** Python, R, Java, HTML, CSS, JavaScript

**Tools:** Pytorch, scikit-learn, Numpy, SQL, Hugging Face API, Pandas, MongoDB, Spacy, OpenCV, Matplotlib, Flask, NLTK, BeautifulSoup, PyMongo, dplyr, Tidyverse, lme4, ggplot, Figma