QINGXUAN CHEN

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🎓 EDUCATION

University of Zurich,   Sep. 2023 – Present
Master of Science in Informatics, expected May. 2025

ETH Zurich (Swiss Federal Institute of Technology),   Sep. 2023 – Present
Special student in Mobility within Switzerland program

The Chinese University of Hong Kong, Shenzhen,   Sep. 2019 – May. 2023
Bachelor of Science in Statistics (Data Science Stream)

👥 EXPERIENCE

CocoRobo Ltd. Shenzhen, China   Jun. 2023 – Aug. 2023
Machine Learning Internship

- Built up a customized chat-bot for online education platform used by **20+** schools using Langchain and accomplished a pipeline from indetifying question to responding question.
- Significantly improved response-time of the chat-bot by **30%** by applying Langchain Agent and integrating GPT-3.5 API. and enhanced the robustness of the chat-bot by **50%** by doubled the variety of files that could be processed by introducing the vector database and prompt engineering.
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Tsinghua-Berkeley Shenzhen Institute Shenzhen, China   Dec. 2021 – Mar. 2022
Research Assistant   Supervised by Prof. Yang Li

- Accomplished a baseline of correction and reconstruction of MRI 3D image data.
- Tested a new MRI prepossessing baseline by reducing the segmentation error for around **5%**.
- Deploy U-Net architecture for MRI data segmentation and reconstruction via Pytorch. Successfully run the whole pipeline and received available result in real-world application.

⚙ PROJECTS

LLM Agent App Developement   Jul. 2024 - Present
Master project at University of Zurich

- Develop and deploy AI-based function on the digital education assistance platform (KlickerUZH) of the university. The agent will generate questions based on the lecture materials provided by lecturer.
- The answer will be generated by GPT-4o model. We will do prompt engineering to let it adapt to multiple functions such as question types, question difficulty and multimedia.
- We will develop a evaluation pipeline to test the quality of the question generated and used for creating own dataset used for later potential fine-tunning process.

3D Scene Understanding   Feb. 2024 - Jul. 2024
semester project at ETH Zurich

- We adapt existing Visual-Language Model (VLM) methodologies on collected 3D mesh and point cloud data to analyze city-scale scenes, focusing on detecting urban characteristics such as house price and building age.
- The building segment task attains an AUC score of **0.927** in specific scene, which is better than existing pipeline (0.875 AUC). Our comparison between our framework and GPT-4o indicates that GPT-4o matches the zero-shot capabilities of SIGLip.

- Our framework indicates that VLMs have the potential to solve urban classification and localization tasks, especially good understanding of some abstract phenomena.

Movie Chat-bot Project   Oct. 2023 – Dec. 2023

semester project at University of Zurich

- Build up a full-stack chat-bot from scratch to answer questions provided by human user and offer recommendation given user's preference from Wikidata's movie database.
- Find the answers and generate human-like response by a mixed mode with SPARQL query, crowd-source research and BERT model. Handle irregular user input by Spacy during entity and relation extraction. Deploying the chat-bot to website by Speakeasy API.

▤ PUBLICATION

V. Bieri, M. Zamboni, N.S. Blumer, Q. Chen, and F. Engelmann, OpenCity3D: 3D Urban Scene Understanding with Vision-Language Models, in *Proc. IEEE/CVF Winter Conference on Applications of Computer Vision (WACV)*, 2025.

☆ SKILLS

- Programming: Python; C++; R; SQL; Git; Linux-shell; LaTeX; Markdown; Docker
- Platform: Pytorch; Huggingface; Scikit-learn; Langchain; Haystack; Spacy; NLTK; MySQL; Postgresql; FastAPI
- Languages: English - C1; Chinese - Native Speaker; German - Elementary