

Yuehan Qi

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EDUCATION

Queen's University

Kingston, ON

Bachelor of Computing (Honors)

September 2019 - April 2023

- cGPA: 3.78 (Excellence Scholarship 2019; Dean's Honor List 2020)

RESEARCH EXPERIENCE

Stable Obstacle Avoidance Strategy for Crawler-type Intelligent Transportation Vehicle in Non-structural Environment Based on Attention-Learning **October 2022**

- Published in *IEEE Transactions on Intelligent Transportation Systems* (DOI:10.1109/TITS.2022.3226493)
- Proposed an autonomous obstacle avoidance control strategy that can effectively guarantee vehicle stability based on an Attention-long short-term memory deep learning model with the idea of humanoid driving.
- Constructed a deep learning obstacle avoidance control based on the Attention-LSTM network model through experiments.
- Designed and improved the autonomous obstacle avoidance control rules to guarantee the safety of unmanned vehicles.
- Verified the stability and accuracy of this control strategy numerically and experimentally.

Edge Guidance Filtering for Structure Extraction

July 2021-August 2022

- Published in *The Visual Computer, Springer Nature* as the second author (DOI: 10.1007/s00371-022-02662-4).
- Optimized the texture filtering methods by smoothing the multiscale, irregular, and high-contrast textures while maintaining detailed structures.
- Looked into more than 40 papers as reference to justify the proposal. Utilized K-means clustering and adaptive kernel scale scheme to secure the image quality.
- Performed wide implications for image processing applications, for example, detail enhancement, virtual color restoration, and texture image segmentation.

PROJECTS

Analysis on Bank's Customer Behavior

- Utilized data cleanse (Excel VBA), sorted out data using python (NumPy, pandas) to give performance on customers' behaviors and segmentation on the newly designated product based on the trend observed from the data.
- Built visualizations in python (matplotlib) for eligible features of the bank, developed the user persona based on the data of accounts, customers, and transactions.

Mask Detection (TensorFlow, Python)

- Trained the Custom Object Detection models to identify mask status and varieties using Watson Visual Recognition.
- Captured images and visualized the detections using python and OpenCV.

Analysis on Apollo for Autonomous Driving

- Analyzed the impacted NFRs and stakeholders, and implementations of a proposed feature of Apollo through the SAMM analysis method.
- Proposed and realized the enhancement for the specific subsystem while minimized the risks to NFRs, strengthening the overall efficiency.
- Applied SciTools Understand for mapping the code to build a concrete architecture of Apollo system then performed the Reflexion Analysis on it.

WORK EXPERIENCE

AI Algorithm Engineer Assistant/Intern | Changchun Yinxun Tech **May 2022 - August 2022**

- Assisted Product Development Division in connecting with customers, clarifying and sorting out customer needs.
- Assisted AI algorithm engineer in algorithm verification, data comparison and other daily work.
- Summarized algorithm results and assisted with AI algorithm design.

Data Analyst/Intern | Changchun Shenji Logistics Co., Ltd **March 2022 - April 2022**

- Completed SWOT analysis of the target market for the online freight platform project and risk assessment of proposed business model.
- Analyzed raw data of logistics information, visualized data with Python and Tableau to analyze drivers' performance, and assisted the company to develop effectively.
- Assisted the department in business analysis, big data processing and data mining.
- Assisted in preparing logistics report and analyzing the prospect of online freight platform project.

Outreach Coordinator | Queen's CSSA **June 2021 - present**

- Responsible for closing deals with potential sponsors, establishing strategic partnerships and event fundraising.
- Single handedly handled and closed a long-term partnership with a telecom company, brought in a considerable amount of sponsorship to our association.

Fashion Assistant/Editor | Cosmopolitan **November 2020 - March 2021**

- Research skills: Monitored and sorted out daily news in the industry and anticipated trends based on the data.
- Leadership: Led the team to study the framework of printed content, assigned tasks and edit photos, and finally obtained efficient team output and superior approval.
- Communication skills: Coordinated logistics and preparation for photo shooting with designers and brands.

EXTRACURRICULAR ACTIVITIES

IEEE Infocom 2023 **November 2022**

- Analyzed the dataset and generated histograms to reduce single precision to half precision.
- Generated and submitted a poster presentation to the IEEE Infocom 2023, based on the paper - *Federated Learning for Anomaly Detection: A Case of Real-World Energy Storage Deployment* which is published on *IEEE Xplore* (DOI: 10.1109/ICC45855.2022.9838875).

Orientation Week Leader (Gael) **September 2022**

- Led a group of 6 incoming students and initiated icebreakers to encourage their interaction.
- Disseminated spirits of university and enhanced interpersonal and leadership skills.

Canadian Celebration of Women in Computing Conference **November 2019**

- Attended the information session and received cutting-edge researches and resources in computer science field.
- Developed my interests in computer vision and machine learning.

SKILLS

- **Programming:** Python, C, Jupyter Notebook, TensorFlow, Cloud platforms, JavaScript, html, SQL
- **Data Visualization:** Tableau, Microsoft suite, Adobe