An Cao

Toronto, Ontario, Canada

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EDUCATION

University of Toronto (UofT) **Sep 2024 – Dec 2025**

Master of Science in Applied Computing (AI concentration) - GPA: 3.90/4.0 *Toronto, Canada*

- *Vector Scholarship in Artificial Intelligence in 2024-2025*

Huazhong University of Science and Technology (HUST) **Sep 2020 – Jun 2024**

Bachelor of Engineering in Software Engineering (AI track) - GPA: 3.96/4.0 *Wuhan, China*

- *Excellent Undergraduate Graduates in 2024*
- *Outstanding Undergraduates in Term of Academic Performance in 2021*
- *Merit Student in 2022-2023, 2021-2022 and 2020-2021*

TECHNICAL SKILLS

- **Functional**: *Machine Learning, Deep Learning, Computer Vision, AI, NLP, LLM*
- **Tools**: *Python, Pytorch, Langchain, Vector Database, AWS, RabbitMQ, Docker, FastAPI*

EXPERIENCE

Modiface **May 2025 – Present**

Role: Machine Learning Intern *Toronto, Canada*

Project: Adapting Vision Language Models to Execute Interactive and Explainable Beauty Tasks

Keypoints:

- Developed an interactive VLM system for beauty sector tasks, enabling user-tailored insights from selfie images
- Integrated face landmark detection and segmentation to enhance VLM outputs with explainable beauty analysis
- Implemented acne scoring with heat-map visualizations to justify system ratings upon user queries.
- Designed smile simulation and glow analysis capabilities to provide personalized face enhancement recommendations.
- Curated diverse image-text datasets to fine-tune the VLM, ensuring robust performance across varied beauty tasks.

Vector Institute **Sep 2024 – May 2025**

Role: Machine Learning Associate *Toronto, Canada*

Project: DiligenceGPT

Keypoints:

- Created a data ingestion system to organize multi-modal information from unstructured sources
- Built an agent to offer business insights from the company's website and suggest key internal/external webpages.
- Developed a RAG-based chatbot for real-time user Q&A with sourced answers from a vector database
- Implemented an agent for due diligence, offering consistent quantitative startup evaluations and in-depth analysis
- Leveraged RabbitMQ to facilitates asynchronous communication between services and smooth demand peaks
- Automated deployment of the multi-service AI system on AWS Fargate using GitHub Actions

Project: Conversational Audience Builder for Synthetic Society

Keypoints:

- Developed a dynamic vector search system with query decomposition, boosting attribute retrieval recall to 89%
- Built a Reranking&Validation module to enhance LLM output consistency and stability
- Created a conversational agent for interactive customer profile building in the synthetic society
- Prototyped a streaming backend on GCP to support real-time interaction between LLM outputs and users

HUST Deep Learning Lab **Sep 2021 – Aug 2024**

Role: Student Deep Learning Researcher *Wuhan, China*

Keypoints:

- Finished two Computer Vision projects as the core researcher of model implementation and algorithm design.
- Authored a conference paper and a SCI Q1 Journal paper for the projects as the first author.

PUBLICATIONS

Diff-STAR (Accepted by IMAVIS, SCI Q1) **Sep 2023 – Aug 2024**

A. Cao and G. Shen, "Diff-STAR: Exploring student-teacher adaptive reconstruction through diffusion-based generation for image harmonization," Image Vis. Comput., vol. 151, p. 105254, Nov. 2024, doi: 10.1016/j.imavis.2024.105254.

LisaCLIP (Accepted by IJCNN as ORAL) **Sep 2022 – Feb 2023**

A. Cao, Y. Zhou, and G. Shen, "LisaCLIP: Locally Incremental Semantics Adaptation towards Zero-shot Text-driven Image Synthesis," in 2023 International Joint Conference on Neural Networks (IJCNN), Jun. 2023, pp. 1–10. doi: 10.1109/IJCNN54540.2023.10191516.