

KECEN YAO

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EDUCATION

University of Toronto

Master of Science in Applied Computing

Toronto, ON

Dec 2025

New York University

Bachelor of Science in Computer Science (Honors) and Data Science (AI), Magna cum laude

Shanghai, China & NYC, NY

Jul 2024

- Major GPA: **3.99/4.00 (top 5%)**, Cumulative GPA: 3.89/4.00
- Awards: NYUSH Hackathon Best Result Award, Dean's List of NYU 2021-2023, NYU Shanghai Excellence Award

SKILLS

Programming Languages: Python, C, C++, C#, Java, JavaScript, SQL, MATLAB, PowerShell, RISC-V, LaTeX

Developer Tools: Docker, AWS(EC2), Unity, Blender, Git, Azure, OpenGL

Frameworks: Numpy, PyTorch, TensorFlow, OpenCV, ROS, Sklearn, pandas

Other: Machine Learning, Computer Vision, Image Segmentation, VR/AR/XR, Generative AI, Large Language Models, Multimodal Models, Diffusion Models, Data-driven, Data Processing, Robot Learning, Reinforcement Learning, Graphics, DNN, R&D

WORK EXPERIENCE

DeepMirror

May 2024 – Aug 2024

Machine Learning Engineer Intern

Guangzhou, China

- Developed a real-time vehicle seatback detector by training a fast and lightweight anchor-free object detection model, significantly improving the accuracy of detection by 10% and resolving failed issues in dark-light scenery.
- Implemented detailed analysis of 8 SOTA algorithms for image retrieval, pose regression, and image matching frameworks based on real-time dataset, leading to replacement of more advanced model in the vehicle's VR project pipeline.
- Improved pose regression / re-localization model for vehicle's VR headset by replacing the time-consuming computing component (RANSAC) with transformer-based architecture, resulting the inference time drop by 10%.

UniDT Technology (Shanghai) Co., Ltd

Aug 2023 – Dec 2023

Machine Learning Engineer Intern

Shanghai, China

- Participated in secondary pre-training and instruction fine-tuning an LLM based on the Baichuan-7B, for the purpose of legal queries, used in 12 universities for digital teaching practices.
- Conducted massive legal data cleaning, data transformed (using GPT-3.5), and data analysis for fine-tuning the LLM.

RESEARCH PROJECTS

New York University

Dec 2022 – May 2024

Research Assistant, AI4CE Lab

NYC, NY

- Led and established a new street webcam streaming video dataset for crowd detection by building a webcam live-data downloading pipeline. Benchmarked 10+ state-of-the-art object detection algorithms using the dataset.
- Introduced statistical guarantee for densities map generated by regression-based object counting model, used them as weak supervisions to refine the regression model by feedback-then-adaptation logic, resulting in average 5% accuracy improvement.

New York University

Jul 2023 – Sep 2023

Research Assistant, NYU Multimedia and Visual Computing Lab

NYC, NY

- Collaborated in building a zero-shot system that can generate gestures for robot grasping and placing tasks using RGBD images by integrating pre-trained language model like GPT-4, visual language model like CLIP, and task-driven model such as GR-ConvNet.
- Explored robotic simulation using ROS (Robot Operating System) and Gazebo, successfully running robotic arm simulation demos.

PROJECTS

Computational Imaging Project | University of Toronto

Sept 2024

- Constructed functional hand-made pinhole camera with designed focal length and changeable aperture.
- Implemented a large-scale image processing pipeline in both spatial and Fourier domains, including image deblurring, denoising, and deconvolution; currently developing an image depth estimator using deep learning techniques.

Bipedal Walker Reinforcement Learning | New York University Shanghai

Sep 2023 – Jan 2024

- Conducted comparative study of Deep Reinforcement Learning algorithms, including Proximal Policy Optimization, Deep Deterministic Policy Gradients, Twin Delayed DDPG (TD3), and Soft Actor-Critic, in OpenAI Gym's BipedalWalker environment.
- Proposed a new environment-aware performance metrics for more accurate evaluation of algorithm efficiency.

Neutral Summarization for Framing Biased Articles | New York University

Jan 2023 – May 2023

- Developed an automatic neutral summarization generator using the T5 encoder and fine-tuned T5 decoder, proposing a solution for mitigating media framing bias caused by selective journalistic writing.
- Demonstrated the model excellence in Avg. Framing Bias metric (arousal) and Salient Info metrics (BLEU and ROUGE1-R) by 13% compared to the baseline model Bert.