

# Jia, Bochun

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## Education

### Institut Polytechnique de Paris

France

M.S. in DataAI — Data and Artificial Intelligence

Sep 2025 – Jul 2027

### Northeastern University (985 University)

China

B.S. in Information Management and Information System

Sep 2018 – Jul 2022

**Research Interests:** Diffusion Models, Multimodal Vision–Language Modeling, Generative AI.

## Research Projects

### Semantic Object Insertion via Latent-Space Generative Modeling

- Formulated semantic object insertion as a **feature-conditioned latent generative modeling problem**, enabling context-aware and semantically consistent image composition.
- Integrated CLIP / CLIPSeg for semantic grounding and automatic object-region alignment under text guidance.
- Proposed a **dual-stage scaling strategy** decoupling pixel-space normalization from latent-space resizing to preserve structural and semantic consistency.
- Applied latent soft blending followed by diffusion-based generation (**DiT with Flow Matching**) to improve global coherence and reduce boundary artifacts.

### Cycle-Consistency Reward for Neural Style Transfer

- Investigated cycle-consistency-driven reward objectives to improve content preservation under bidirectional style transformations.
- Analyzed the impact of cyclic constraints on generative stability, convergence behavior, and stylization fidelity.

## Work Experience

### Citigroup Services and Technology (China) Limited

Shanghai, China

*Data Engineer — Data Infrastructure & MLOps Excellence*

Jul 2023 – Jul 2025

- Designed and implemented a **data governance and lineage system** ensuring full traceability of training data and feature sources, supporting model risk management and regulatory compliance in production ML systems.
- Built **real-time data quality and distribution drift monitoring** pipelines to improve robustness, reproducibility, and stability of large-scale MLOps workflows.

*Software Engineer*

Jul 2022 – Jul 2023

- Led system architecture design and development of an **automated regulatory reporting platform** adopted by multiple financial institutions across the Asia-Pacific region.
- Developed AI-assisted internal analytics tools, including automated data-difference detection pipelines (Oracle & Hive) and high-performance distributed RPC modules.
- Built scalable data-processing infrastructure for heterogeneous, high-volume inputs, providing a strong engineering foundation for applied AI research and experimentation.

### Designer of Intelligent Interactive Robot

Mar 2023 – Sep 2023

- Developed real-time speech detection and NLP pipelines on Raspberry Pi for natural language-based human–robot interaction.
- Integrated embedded computer vision modules (OV2640) for visual perception and environment awareness.
- Designed multimodal decision-making and motion control on ESP32, integrating speech and vision signals for coordinated robotic behaviors.
- **Awards:** 3rd Prize, 8th “Zhangjiang Cup” Science & Technology Innovation Contest; Innovation Talent Competition Award.

## Technical Skills

**Programming & Frameworks:** Python, PyTorch, TensorFlow, C++, Java, Docker, Git

**AI & Research Focus:** Transformers, Diffusion Models, Computer Vision, Applied NLP