

# Zecheng(Zephyr) Yin

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## Hard-working bee

Hi. My name is Zecheng(Zephyr) Yin. I'm a fanatic about cutting-edge researches about Embodied AI (Vision Language Navigation & Vision Language Action), Natural Language Processing(NLP), VLM/LLM, Computer Vision and Graph Data mining. I am currently a researcher and engineer in Shenzhen Future Network of Intelligence Institute (FNii) led by fellow of Canadian Academy of Engineering Shuguang Cui, and working closely with Prof. Zhen Li in The Chinese University of Hong Kong(Shenzhen).

In my M.S., I was advised by Prof. Yanchun Zhang and Hong Yang in the area of graph neural network medicine textual data mining as well as protein structural predicting at Guangzhou University. During this period, I had an internship at Kuaishou for NLP search mining and an internship at IDEA for financial graph malware detection. Prior to M.S., I was shortly advised by Prof. Jin Li in the area of federated learning and attack at Guangzhou University when in B.S..

## Publications

HyPerNav: Hybrid Perception for Object-Oriented Navigation in Unknown Environmen, ICRA'26 (Under Review)	Sept 2025
<b>Zecheng Yin</b> , Shuguang Cui, Zhen Li	
Navigation with VLM framework: Go to Any Language, ICRA'26 (Under Review)	Sept 2024
<b>Zecheng Yin</b> , Shuguang Cui, Zhen Li	
TCMCoRep: Traditional Chinese Medicine Data Mining with Contrastive Graph Representation Learning, KSEM'23 (ccf-c, acceptance rate: 23.1%)	May 2023
<b>Zecheng Yin</b> , Jinyuan Luo, Yanchun Zhang	
HGCL: Heterogeneous Graph Contrastive Learning for Traditional Chinese Medicine Prescription Generation, HIS'22 (acceptance rate: 27.78%)	Aug 2022
<b>Zecheng Yin</b> , Yanchun Zhang	
A hybrid-scales graph contrastive learning framework for discovering regularities in traditional Chinese medicine formula, BIBM'21 (ccf-b, acceptance rate: 19.6%)	Feb 2021
Yingpei Wu, <b>Zecheng Yin</b> , Yanchun Zhang	
ResMGCN: Residual Message Graph Convolution Network for Fast Biomedical Interactions Discovering, arxiv2023	Aug 2022
<b>Zecheng Yin</b>	

## Education

Guangzhou University, M.S. in Computer Science	Sept 2020 – May 2023
• GPA: 3.4/4.0	
Guangzhou University, BS in Computer Science	Sept 2016 – May 2020
• GPA: 3.36/4.0	

## University of Washington, AI&robotics program

- AI&Robotics program, certificate of excellence, mentored by Melody Su

## Proficiency

### Vision Language Navigation basis

- Path planning & following, map constructing in SLAM.
- Modeling on depth, voxel, camera, and point cloud.
- VLM usage and development.
- Implementation of self-designed QwenVL/InternVL server via Flask

- LoRA PPO reinforcement learning fine-tuning on minicpm-v-2.5.

## Simulation and real-world robots development

- Simulation tools such as Habitat, and Omnidgibson(Behavior-1k).
  - Simulation developing tools such as controlling various robots with arm manipulation (IK-controller) and locomotion
  - Real-world robots. Navigation validation experiments in Realman robots.

## Graph neural network

during M.S.

- To model different entities, such as text, molecules, and protein atoms, into graphs (both homogeneous and heterogeneous) and to use various types of graph neural networks to predict their properties and interactions.

## Natural language processing

during M.S. & intern

- Transformer, text entity extraction, text searching alignment, relation construction, representation of tokens, similarity-based recommendation

## Contrastive learning

during M.S.

- advanced contrastive learning, contrastive loss innovation during master.

## Software developing

during FNii

- Web development, backend and front end, one project still at work.
  - Implementation of federated learning platform via FATE core service, architecture, file operating system, storage logic, etc..

## Industry

**Research engineer full time**, CUHK(Shenzhen)-FNii, Shenzhen July 2023 – present

- Vision Language Navigation and (Robot Arm) Vision Language Action.

NLP algorithm intern, Kuaishou, Beijing May 2021 – June 2022

- Text searching alignment by designed transformers and contrastive learning.
  - Construct text dataset and calculate stuffs by long SQL.

Algorithm engineer Intern, IDEA, Shenzhen June 2022 – Oct 2022

- 2 transferrable graph embedding (graph sage and random walk) experiments, see github repo1 and repo2
  - Implementation of PPRGO.

## Open Source & Projects

Replicate and deploy VLA/VLN projects 2024

- VLN replication such as GoToAnything in both habitat and omnigibson, which includes intrinsic parameter, point cloud, coordinates calibration, http communication build-up.
  - VLA transfer such as Openvla (CoRL'24), Rekep (ICRA'25) in omnigibson, which includes end-effector controlling, locomotion controlling, object locating, project refactoring .
  - Opensourced easy-to-use keyboard control and nearest frontier exploration example in Habitat3.

LLM-powered multi-agent system FNii project

Pytorch geometric(PyG) contributor & Chinese poetry dataset

FNii project  
check PyG check dataset

- Implementation of DMGI, to PyG (a popular GNN learning library).
  - The dataset got hundreds star volunteer .
  - I regularly post technical reports and articles on CSDN, which have accumulated over 1 million views.

## Skills

**Languages:** Python, bash, C++, SQL

**Proficiency at:** Linux, Git, Pytorch, Flask, Latex, C++