

Junyao Hu (胡钧耀)

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EDUCATION

China University of Mining and Technology (Jiangsu, China)

Sep 2019 - Jun 2023

B. Eng., Computer Science and Technology. Advisor: [Jiaqi Zhao](#).

- Score, GPA & Rank: 88.78, 4.17/5.00, 10/129 (top 8%).
- Related Courses: Python Programming Practice (100), Artificial Intelligence Control (98), Application Software Development Practice (98), Linear Algebra (97), Practical Optimization Algorithms (97), Data Structure (92).

PUBLICATIONS

Zhang, Z., **Hu, J.**, Cheng, W., Paudel, D., & Yang, J. (2024). ExtDM: Distribution extrapolation diffusion model for video prediction. In *CVPR* (pp. 19310-19320). (CCF-A, co-first author) [\[Paper\]](#)[\[中译版\]](#)

RESEARCH EXPERIENCE

Effective Video Prediction Method based on Diffusion Model

Dec 2022 - Jun 2024

[CV Lab](#), Nankai University (Tianjin, China). Advisor: [Jufeng Yang](#), [Wentao Cheng](#).

[\[Code\]](#)[\[Video\]](#)

- Conducted extensive research on prevailing video prediction methods and diffusion models.
- Innovated a novel approach that extrapolates video content from current frames towards future ones by modeling the distribution shift of motion cues, which relieves heavy computation burden in denoising process.
- Executed comparing and ablation experiments, analysed the results, authored the foundational manuscript, resulting in a co-first author publication at CVPR 2024.
- Engaged as one of poster presenters at VALSE 2024.

Intelligent Vision Lawn Mower

Jun 2023 - Jun 2024

[CV Lab](#), Nankai University (Tianjin, China). Advisor: [Jufeng Yang](#).

[\[Code\]](#)[\[Video\]](#)

- Executed comprehensive market research, assessed the strength and weakness of rival products, validated the robustness of Raspberry Pi and the practicality of AI algorithms through consulting and technical evaluations.
- Engineered an effective obstacle avoidance algorithm, deployed the algorithm in Robot Operating System (ROS), enabling the lawn mower to integrate vision and ultrasonic sensing for pedestrian and obstacle detection and evasion.

Mine 3D Construction & Location Technology

Mar 2021 - Jun 2023

China University of Mining and Technology (Jiangsu, China). Advisor: [Jiaqi Zhao](#), [Yong Zhou](#).

[\[Report\]](#)[\[Video\]](#)

- Developed movement control and communication software for the robot car by ROS and Qt Creator programming.
- Collected and labeled lane line segmentation data, engineered an effective lane detection algorithm based on UNet3+.
- Competed in the National College Intelligent Car Competition, achieving the national third-place award.

EasyWriting: Intelligent Content Creation Platform

May 2022 - Aug 2022

China University of Mining and Technology (Jiangsu, China). Advisor: [Ying Zhao](#).

[\[Report\]](#)[\[Video\]](#)

- Scraped and cleaned data from official political commentary websites to collect articles of title, content, type, etc.
- Developed the website using Django, designed functions such as generating suggested article titles and summary.
- Served as captain and participated in software design competition, achieving the national third-place award.

HONORS & AWARDS

National Scholarship (top 1%)

Dec 2020

Excellent Undergraduate Graduate (top 10%)

Jun 2023

National College Student Intelligent Car Competition - National Third Prize

Sep 2022

China Software Cup College Student Software Design Competition - National Third Prize

Oct 2022

China Undergraduate Mathematical Modeling Competition - Provincial First Prize

Oct 2021

ACADEMIC SERVICE

Reviewer: CVPR'24 ([Outstanding Reviewer](#)), ACMMM'23, TMM'23

Teaching Assistant

- High School Student Talent Plan Jun 2024
Guided students to learn python programming, assisted them in developing innovative projects. [\[Code\]](#)[\[Video\]](#)
- Freshman Education Lecture Aug 2022
Offered actionable advice to freshmen on thriving academically and socially in college on my experience. [\[Slide\]](#)[\[Video\]](#)
- Discrete Mathematics May 2021
Assisted students in mastering course key concepts by conducting focused review lessons. [\[Slide\]](#)[\[Video\]](#)

Open Source Repository

- Common Metrics on Video Quality Jun 2024
Integrated FVD, PSNR, SSIM, and LPIPS calculation methods for assessing video quality easily. [\[Code\]](#)
- Academic Project Page Template Vue Jan 2024
Developed a new project homepage template based on Vue, which supports one-click copying of BibTex. [\[Code\]](#)
- MiniSora Jan 2024
Collected the latest video generation papers, managed the repository's PR and review. [\[Code\]](#)

Community Contributor

- SmartFlow Jun 2024
Authored articles for the account, delivering comprehensive analyses and interpretations of best papers. [\[Report\]](#)
- Datawhale Sep 2020
Served as promotion ambassador, promoted team learning activities and competitions to students. [\[Report\]](#)

WORKING EXPERIENCE

Vice Director of Video Production Department

Sep 2021 - Jun 2022

CUMT/CUMTCS New Media Center (Jiangsu, China).

[\[Code\]](#)[\[Video1\]](#)[\[Video2\]](#)

- Employed Python crawlers to detect sensitive content in website articles by utilizing Requests and Selenium.
- Supervised 2 short films, produced 30+ videos to promote the campus, with 250K+ likes.

MISCELLANEOUS

- **Languages:** English: TOEFL (TBD), CET-6 (540), CET-4 (541); Mandarin Chinese: Native.
- **Technical Skills:** Data analytics, web development, prompt engineering.
- **MBTI:** INFJ (analytical, empathic, creative).
- **Strength:** Self-driven power, time-management capability, 10-year class monitor experience.
- **Hobbies:** Self-media (reached 2.7M+ plays on [Bilibili](#)), running (completed half marathon once), singing (performed during school's [Gala](#) as a member of CUMT choir).