

Yutao Yang

INCOMING DIRECT-ENTRY PH.D. STUDENT

Beijing / Tianjin, China

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Yutao-Yang | 0009-0002-3304-9081 | Google Scholar | CPC Member



Profile

Born Apr. 7, 2005; Chinese nationality; originally from Hongtong, Shanxi, China; full member of the Communist Party of China. Incoming direct-entry Ph.D. student jointly trained by Beijing Zhongguancun College and the College of Excellent Engineers at Nankai University; B.Eng. in Software Engineering from Shanxi University. My research interests include video understanding and temporal modeling, world models, vision-language-action (VLA) learning, and task decomposition with hierarchical planning.

Personal qualities: enthusiastic, responsible, patient, meticulous, and approachable.

Education

Beijing Zhongguancun College & College of Excellent Engineers, Nankai University

Beijing / Tianjin, China

DIRECT-ENTRY PH.D. STUDENT, ELECTRONIC INFORMATION

Sep. 2026 – Present

- Joint study in Electronic Information at Beijing Zhongguancun College and the College of Excellent Engineers, Nankai University.
- Research interests: video understanding and temporal modeling, world models, vision-language-action learning, and task decomposition with hierarchical planning.

Shanxi University

Taiyuan, China

B.ENG. IN SOFTWARE ENGINEERING

Sep. 2022 – Jun. 2026

- Required-course GPA: 3.74/4.50; weighted average: 89.70/100; major rank: 7/801 (Top 0.9%); graduate-recommendation rank: 4/801 (Top 0.5%).
- Outstanding Undergraduate Graduate of Shanxi University; National Encouragement Scholarship three times; First-Class Academic Scholarship three times.

Publications

[1] Yandong Liu, **Yutao Yang**, Shengjiao Dong, Wenqiang Zhang, Xiang Li, Mengli Yu, Zhao-Min Chen, and Lingfeng Yang. "Speech-Aware Multimodal Video Slicing for Automated Video Trimming." *Proceedings of the 34th ACM International Conference on Multimedia (ACM MM)*, 2026. **Accepted; second author; CCF-A conference.** The work introduces SeamSlicer, a multimodal atomic-boundary extraction and refinement framework, and AtomicBench, an atomic-level video-trimming benchmark.

Research Experience

LumenSport: AI-Powered Sports Video Analysis and Automated Editing

Nankai University /

Open-source project

LEAD DEVELOPER / PROJECT LEAD

Sep. 2025 – May 2026

- Led an end-to-end system that transforms raw sports footage into edited highlight reels, focusing on football and basketball while supporting nine sports.
- Designed a layered pipeline for sport classification, round/possession segmentation, highlight scoring, tactical event analysis, player detection and tracking, and automatic reel generation.
- Integrated Swin Transformer, SlowFast, ConvNeXtV2, VideoMAE, YOLO, ByteTrack, and large multimodal models; built player-focused football/basketball processing and Alibaba Cloud OSS support.
- Developed an editing orchestrator with eight storytelling strategies: highlights, funny moments, tactical analysis, technical analysis, comparison, knowledge, match replay, and training.
- Built a Python backend and React/Vite/TypeScript interface covering editing, materials, analytics, and tactical views; released the system under Apache-2.0 at github.com/Yutao-Yang/LumenSport.
- The associated football platform won First Prize in the Football Application Innovation Track of the First National Football Artificial Intelligence Innovation Exchange Conference.

- Studied atomic-level automated video trimming by jointly modeling visual continuity, narration, multi-speaker dialogue, music, sound effects, on-screen text, and ambient audio.
- Contributed to the three-stage framework of multimodal candidate-boundary extraction, visual boundary refinement, and multi-strategy proper-length control, as well as experiments, analysis, and paper preparation.
- Helped construct and evaluate AtomicBench, comprising 100 videos, approximately 1,000 minutes, and 15,779 atomic-boundary annotations for visual smoothness and semantic coherence.

Siamese Network-Based Surveillance Video Anomaly Detection

Shanxi University

PROJECT LEAD

Jul. 2024 – Jun. 2025

- Established a shared-weight Siamese-network baseline for visual similarity learning in surveillance anomaly recognition, then extended the two-branch method with a four-branch metric-learning training strategy.
- Designed grouped and depthwise-separable convolution blocks, multi-scale feature concatenation, and skip connections to strengthen representation under illumination changes and partial occlusion.
- Introduced learnable loss weighting to balance pair and triplet constraints through backpropagation, supporting finer-grained separation between normal and abnormal behavior patterns.

Fire and Smoke Detection with YOLOv8 and Multidimensional Collaborative Attention

Shanxi University

PROJECT LEAD

Mar. 2023 – Sep. 2024

- Built a YOLOv8-based fire and smoke detection pipeline for diffuse smoke, partially occluded targets, and small flames in complex scenes.
- Designed parallel dilated-convolution context enhancement, MCA attention, and a coordinate-attention-guided hierarchical feature-selection pyramid for multi-scale feature fusion.
- Achieved 91.8% mAP on a self-built dataset; improved occluded-target recall by approximately 0.5–0.6 percentage points and small-flame accuracy by 1.7 percentage points.

MakeupVision: AI-Based Virtual Makeup Platform

Shanxi University Innovation
Project

PROJECT LEAD

May 2024 – May 2025

- Led a virtual-makeup vision pipeline integrating Light-FaceDetector, a 106-point facial-landmark heatmap model, and Makeup-master facial semantic segmentation.
- Developed ROI localization, lip and eye-region masks, and cross-layer texture-feature transfer to connect dense facial geometry with localized makeup synthesis.
- Improved processing stability for low-light and backlit portraits through region-aware localization and masking; the university innovation project was rated Good at completion.

Honors and Awards

NATIONAL-LEVEL COMPETITIONS

Jun. 2026	First Prize , First National Football AI Innovation Exchange Conference, Football Application Innovation Track	China
Jul. 2025	Second Prize , National 3D Digital Innovation Design Competition 17th Anniversary Elite League	China
May 2025	Second Prize , National College Business Elite Challenge, Brand Planning National Finals	China
Jun. 2025	Third Prize , 16th Lanqiao Cup National Finals, Python Programming, University Group B	China
May 2025	Third Prize , 2025 Group Programming Ladder Tournament National Finals	China

PROVINCIAL-LEVEL COMPETITIONS

Jun. 2025	Special Prize , National 3D Digital Innovation Design Competition, Shanxi Division	Shanxi
Aug. 2025	Silver Award , China International College Students' Innovation Competition, Shanxi	Shanxi
May 2025	First Prize , 16th Lanqiao Cup, Python Programming, University Group B	Shanxi
May 2025	First Prize , 2025 Group Programming Ladder Tournament, Shanxi	Shanxi
Jun. 2025	Second Prize , 18th Chinese Collegiate Computing Competition, Digital Media Game and Interaction	Shanxi
Apr. 2024	Second Prize , 15th Lanqiao Cup, Python Programming, University Group B	Shanxi

Jan. 2024	Second Prize , 15th Chinese Mathematics Competition, Non-Mathematics Group A	<i>Shanxi</i>
Jun. 2025	Third Prize , 16th Lanqiao Cup Visual Art Design, Static Poster	<i>Shanxi</i>
May 2025	Third Prize , 2024 National Undergraduate Mathematical Contest in Modeling, Shanxi	<i>Shanxi</i>
Aug. 2024	Third Prize , 17th Chinese Collegiate Computing Competition, Software Applications and Development	<i>Shanxi</i>
Apr. 2023	Third Prize , 14th Lanqiao Cup, C/C++ Programming, University Group B	<i>Shanxi</i>
Jul. 2025	Excellence Award , 27th China Robotics and Artificial Intelligence Competition, Provincial Selection	<i>Shanxi</i>
Dec. 2023	Excellence Award , 2023 National Undergraduate Mathematical Contest in Modeling, Shanxi	<i>Shanxi</i>

UNIVERSITY-LEVEL COMPETITIONS

May 2025	First Prize , 15th Market Survey and Analysis Competition, Shanxi University Selection	<i>Taiyuan</i>
Jul. 2024	First Prize , China International College Students' Innovation Competition, Shanxi University	<i>Taiyuan</i>
May 2024	First Prize , 10th New-Form Software Competition, 3D Digital Art Teaching System	<i>Taiyuan</i>

Scholarships and Distinctions

Jun. 2026	Outstanding Undergraduate Graduate , Shanxi University	<i>Taiyuan</i>
Oct. 2025	National Encouragement Scholarship , Ministry of Education / Shanxi University	<i>China</i>
Nov. 2024	National Encouragement Scholarship , Ministry of Education / Shanxi University	<i>China</i>
Nov. 2023	National Encouragement Scholarship , Ministry of Education / Shanxi University	<i>China</i>
Oct. 2025	First-Class Academic Scholarship , Shanxi University	<i>Taiyuan</i>
Nov. 2024	First-Class Academic Scholarship , Shanxi University	<i>Taiyuan</i>
Nov. 2023	First-Class Academic Scholarship , Shanxi University	<i>Taiyuan</i>
May 2024	Three-Good Student , Shanxi University	<i>Taiyuan</i>
May 2023	Three-Good Student , Shanxi University	<i>Taiyuan</i>
May 2026	Highest Year-End Performance Tier , Nankai University Research Internship	<i>Tianjin</i>

Certifications, Skills, and Activities

Programming	Python, C/C++, Java, MATLAB, SQL, JavaScript/TypeScript
AI / Vision	PyTorch, OpenCV, NumPy, Pandas, scikit-learn
Engineering	Linux, Git, React, Vite, LaTeX, OSS, Java web deployment, Unity, 3ds Max, SolidWorks, SPSS, Visio
Certification	Huawei HCIA-Kunpeng Application Developer; valid through Apr. 19, 2027
English	CET-4: 427 (Jun. 2023); CET-6: 424 (Dec. 2024)
Data Science	Kaggle Stanford RNA 3D Folding: rank 331/1516 (Top 21.8%)
Technical Writing	CSDN AI creator; 420,000+ cumulative views and 13,000+ followers

Leadership, Volunteering, and Practical Experience

Calligraphy and Painting Association, Shanxi University	<i>Taiyuan</i>
ORGANIZATION AND PUBLICITY OFFICER	<i>Oct. 2023 – Sep. 2024</i>

- Helped organize and deliver 10+ calligraphy exhibitions, member activities, and publicity campaigns, coordinating preparation, communications, and on-site execution.
- Practices Chinese brush calligraphy, specializing in Slender Gold script and regular script.

Class Safety and Mental-Health Service	<i>Shanxi University</i>
SAFETY AND MENTAL-HEALTH COMMITTEE MEMBER	<i>Sep. 2022 – Jun. 2026</i>

- Served as class safety committee member, communicating safety information, conducting routine awareness activities, and coordinating related matters.
- Served as class mental-health committee member, supporting classmates, assisting with well-being activities, and facilitating communication when needed.

In-Person Campus and Community Volunteering	<i>Shanxi University and local community</i>
VOLUNTEER	<i>Sep. 2023 – Jun. 2026</i>

- Completed 202 cumulative hours of in-person volunteer service across campus and community activities.