Bohan Su

Wuhan University Software Engineering (Bachelor)

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Education

Wuhan University Bachelor Software Engineering **Sep 2023 – Jun 2027 (Expected)**

- **GPA:** 3.74 / 4.0
- **Core Courses:** Computer Vision, Frontier Technologies in Artificial Intelligence, Computer Networks, Operating Systems, Software Engineering, Software Quality Assurance and Testing, Database Systems, Object-Oriented Programming
- **Research Interests:** Visual Representation under Appearance Variations, Structured Scientific Reasoning with Small Models, Multi-Agent Systems and Real-World Task Systems

Research & Ongoing Work

Reliability-Aware 3D Geometric Injection for Universal Person Re-identification (First Author) Oct 2025–Mar 2026 ECCV 2026 Sub.

- Focused on pain points of Universal ReID under complex scenarios such as occlusion, clothing change, and cross-modality, explored monocular 3D geometric prior enhancement mechanisms, completed the paper and supplementary materials, and submitted to ECCV 2026 (ID: 10537).
- Designed and proposed the UniGeo framework, innovatively decoupling SMPL body parameters into global shape and joint topology representations; introduced a Reliability-Aware Gate mechanism to achieve adaptive dynamic residual fusion between 2D visual features and 3D structural features, effectively suppressing negative transfer interference from unreliable geometric estimation.
- Conducted unified training, comparative experiments, and ablation analysis on 9 ReID benchmarks including Market-1501 and MSMT17, supplemented with gate correlation, fusion complexity, and image perturbation stability verification, evaluating the effectiveness and robustness of 3D geometric injection across different task scenarios.

PEARL: Decoupling Generation from Verification for Small-Model Scientific Reasoning Graph Extraction (First Author) Mar 2026–Present Target: EMNLP

- Addressed the Peircean scientific reasoning graph extraction task in ARCHE, proposed the schema-first PEARL framework that decouples structure learning from DOT syntax generation and decouples diagnosis from repair, enabling small models to reliably produce verifiable scientific reasoning graphs.
- Designed graph_spec intermediate representation, validator and compiler, issue-list repair loop, and joint-score evaluation pipeline; the 4B Qwen student model handles generation while structural validation and repair are managed by external modules.
- Adopted five-teacher quality-weighted SFT with Smart Prompt, aiming to achieve majority-teacher advantage on joint-score; Phase 1 mainline code and Gate B local three metrics have passed acceptance, Phase 3–5 main experiments are queued for execution.

Research & Ongoing Work

Continued

Appearance Variations in Person Re-Identification: A Survey (First Author) Mar 2026–Present
TPAMI Survey Prep.

- Reconstructed the taxonomy of the field through a three-branch framework of short-term / long-term / composite appearance variations, and reorganized existing methods via a "robustness vs. generalization" lens; the long-term scale further distinguishes three axes: clothing state, beyond clothing, and deployment evolution.
- Systematically reviewed method evolution in Person Re-ID, domain generalization, Transformer ReID, and multimodal large models across clothing change, occlusion, cross-modality, and in-the-wild viewpoint scenarios, analyzed structural blind spots in existing evaluation systems, and argued for the design space of next-generation evaluation metrics.
- Currently completed §2–§8 main text and 231 references; §1 introduction and literature-reference alignment are still under iteration; next focus is on evaluation blind spots and metric transferability analysis under appearance variation scenarios.

Project Experience

Modular Robot System Development Nov 2023–Aug 2025
National 1st Prize / Prov. Project

- For children's programming education scenarios, participated in the software architecture design of a modular intelligent hardware system and a two-bus power-communication integrated platform; responsible for implementing module coordination, bus arbitration, hot-plug, and bus merging control logic.
- Participated in communication protocol development, embedded driver development, and system integration testing, supporting three rounds of PCB iteration and 24V industrial environment adaptation; achieved a system communication success rate of 98.5% and approximately 40% improvement in communication efficiency over traditional solutions.
- Won the National First Prize (Top 6) in the National University IoT Design Competition, completed the provincial College Student Innovation and Entrepreneurship Training Program, and advanced patent and software copyright applications.

A4R: Guided Smartphone AI Assistant May 2025–Aug 2025
National 2nd Prize

- Addressed the limitation of smartphone agents being "only capable of passive response, unable to proactively clarify" under ambiguous demand scenarios, designed and implemented the A4R (Ask for Refine) guided interaction scheme.
- Designed agent collaboration mechanisms including Guide, Discern, and Validate, constructed over 150 real interaction samples covering 6 domains and 16 apps (communication, social, e-commerce, travel, entertainment, tools).
- On China Unicom's real-scenario tasks, compared with baselines such as MobileAgent-V2, MobA, and GUI-Explorer, the A4R scheme achieved superior results in completion rate, skip rate, and effective guidance rate, with a completion rate of 64.68, validating the effectiveness of guided smartphone AI assistants in ambiguous-demand scenarios.

A2A Protocol Multi-Agent System Development Nov 8–10, 2025
Shanghai Autumn Camp

- Developed a multi-agent system based on the Holos platform and A2A protocol (v0.3.0), addressing limitations of the default planning and routing mechanism under uncertain requirement scenarios by designing and implementing an A4R architecture enhancement.
- Designed and implemented architectural-level agents (GuideAgent, DiscernAgent) and 8 functional agents (weather query, itinerary planning, etc.), completing the collaboration chain from requirement clarification, task decomposition, to result verification.
- Completed protocol adaptation, SSE streaming response, task fingerprint deduplication, LLM/rule dual-track fallback, and multi-agent chain observability debugging, supporting end-to-end scenario demonstrations for travel planning and email collaboration.

Digital Legacy Interactive Exhibition System Oct 2024–Jun 2025
Innovation Project

- For digital memory preservation and virtual asset revitalization scenarios, participated in the design and development of the 3D interaction module; built a 3D interactive prototype based on Unity3D, contributed to interaction logic development and scene expression design, supporting project exhibition and roadshow presentations.

Awards & Honors

1. Representative Competition Achievements

- National University IoT Design Competition (Huawei Cup) **National First Prize** (Top 6)
- China Youth Sci-Tech Innovation Challenge **National Second Prize**
- National University Computer System Capability Competition – Intelligent System Innovation (Xiaomi Cup) **National Third Prize**
- Mathematical Contest in Modeling (MCM/ICM) **Honorable Mention**
- National University Mathematical Modeling Competition (Hubei Provincial Second Prize), National University IoT Design Competition (Central-Southwest Regional First Prize)

2. Scholarships & University Honors

- **Zheng Geru First-Class Scholarship** (10,000 CNY; ranked 1st in grade defense, the only recipient)
- Wuhan University First-Class Scholarship (2 times), Merit Student (2 times)
- Wuhan University Outstanding Student Cadre, Outstanding Youth League Branch Leader, Future College Outstanding Trainee

3. Extracurricular Achievements

- Hubei Provincial Radio Direction Finding Championship Individual All-Around M21-A 3rd Place; Wuhan University Sunshine Sports Outstanding Individual

Student Activities

- **Vice Minister of Publicity, Student Party Branch Secretaries Joint Council, Wuhan University (Sep 2024–Sep 2025):** Participated in undergraduate Party building publicity work, assisted in article organization, content coordination, and publishing process optimization; contributed to over 100 published articles including theoretical pieces, promoting standardized publicity operations.
- **Project Team Member, Second Classroom Center, University Youth League Committee (Oct 2023–Sep 2024):** Participated in platform quality monitoring and issue investigation, assisted in reporting and driving fixes for multiple platform issues, supporting platform stability optimization and user experience improvement.

Core Skills

- **Programming Languages & Tools:** Python, C/C++, Java; proficient in Git version control and MATLAB
- **Computer Vision & 3D Modeling:** Familiar with person re-identification (ReID), SMPL body parametric modeling, 3D Gaussian Splatting; experienced in experimental design, ablation analysis, multi-dataset evaluation, and academic writing
- **LLMs & Multi-Agent Systems:** Proficient in multi-agent system design, task orchestration and routing, result verification and observability debugging; experienced in application development with mainstream LLM APIs (e.g., GPT, Claude, Gemini)
- **Embedded System Development:** Familiar with embedded driver development and modular hardware protocol design; experienced in RISC-V / ESP32 dual-architecture platform development and system integration