DAI XUDONG

COMPOSER | MUSIC AI RESEARCHER | CREATIVE TECHNOLOGIST

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Composition undergraduate and founder of two creative-technology ventures, working on symbolic music research, original composition and creative systems that retain human review.

EDUCATION

Xi'an Conservatory of Music | Sep 2022 - Jun 2027 (expected)
Undergraduate in Composition | Five-year programme. Composition, harmony, counterpoint, orchestration, form, digital music production and audiovisual creation.

Self-taught Higher Education Examination | 2025 - Present
Computer Science and Technology | Sichuan University self-taught examination pathway | In progress.

Xi'an Conservatory of Music | Sep 2025 - Jun 2026
Micro-major in Music Industry Planning and Management | First cohort; copyright, distribution and project planning.

Stanford University, CCRMA | Online summer workshop | 19-23 Aug 2024
Perception-Based Orchestration for Composer-Performers | Online workshop participation (non-degree).

CORE RESEARCH AND CREATIVE TECHNOLOGY PROJECT

Xunpu Studio | Founder & Product Research Lead | 2024 - Present
Xunpu Music Creation Technology Co., Ltd. | AI music software venture. Core platform for music learning, symbolic-score analysis and creative practice across desktop and mobile.

- Led requirements and prototypes, translating composition pedagogy and user needs into rule checks, evidence displays and human revision.
- Built MusicXML/MXL/MIDI parsing, PDF/image-through-OMR input, harmony/counterpoint rules, heuristic form suggestions, score annotations and AI-assisted explanation.
- Documented closed pilot: 50 participants; 1,247 core-function calls; eight weeks (Dec 2025 - Feb 2026).

Xunpu AI Synth | Natural-language timbre design and DAW plug-in development
Playable browser prototype translates Chinese/English sound descriptions into editable synth parameters, with A/B comparison and WAV export. DAW-integrated plug-in is under development.

SELECTED ARTISTIC WORKS

Algorithmic Awakening | Computational / AI-assisted music work | 2026
Wrote serial/random-sequence generators; curated and arranged materials, designed sound and mixed/mastered in Studio One. Iterated through register separation, sustained layers, onset-density changes and upper-frequency adjustments.

Kucha | Commissioned original music work
Commissioned by Xinjiang Cultural Tourism Investment Group for a cultural-tourism production. Audio: daixudong.art.

The Vanished Kingdom | Original orchestral composition
Full orchestra: woodwinds, brass, strings, harp and percussion. Wind figures and string layers develop contrast through register, colour and articulation. Score/audio: daixudong.art.

Ling | Original composition | International composition awards (see below)

AWARDS AND HONOURS

- Best AI Music Production Award, 2nd HKUST AI Film Festival x MiniMax - Algorithmic Awakening (2026).
- First Prize, Composition, 11th Ivy International Grand Prize of Music - PRC district / China Beijing (2025).
- Gold Prize, Innovative Writing, Erik Satie International Music Competition - Ling (2024).
- First Prize, Composition, Victory International Music Competition, New York (2024).
- First Degree Laureate, Composition, ART Victory "I Am a Composer" - Ling (2024).
- Second Prize, AIMA International Composition Award, Category I (2024).
- Second Prize, Original Composition, UK International Music Competition - Ling (2024).
- Honorable Mention, OPUS ARTIS PARIS International Composition Award, Category I (2024).
- Fourth Degree Winner, Scandinavian International Composition Competition - Instrumental Music / Students (2024).
- Second Prize, Challenge Cup, Shaanxi Provincial Finals - Rhythm Intelligence | Team Lead (2026).
- Honor Scholarship, Xi'an Conservatory of Music (2024, 2025).
- First Prize, 3rd National College Student Mathematics Ability Challenge (2025).
- Shaanxi Silver Award, China International College Students' Innovation Competition - Xunpu Studio (2026).

TECHNICAL SKILLS

Music: Composition, orchestration, score analysis, MusicXML/MIDI, sound design, recording and mixing. **Software:** Python, TypeScript, FastAPI, Node.js, Electron, SQLite, OMR workflows and model API integration.

PROFESSIONAL QUALIFICATIONS AND MEMBERSHIPS

Qualification: Intermediate Recording Engineer Certificate.
Memberships: Shaanxi Musicians Association; Xinjiang Musicians Association; Chinese Association for Artificial Intelligence (CAAI); China Association of Recording Engineers (CARE).

RESEARCH AND PROTOTYPES

Musicology-Guided Structural Attention for Measure-Level Boundary Detection in Symbolic Music
MGSA | Independent research, 2026

- Transformer-style measure encoder: motif, harmony, predicted cadence, repetition and metric priors, plus a cross-boundary penalty in attention logits.
- Five-seed Mozart Fold 0 pilot: exact F1 0.3332 (MGSA) vs 0.3297 (matched control); ±1-measure F1 0.4569 vs 0.4588. No consistent advantage established; full grouped evaluation is next.

Xunpu GraphOMR | Explainable OMR research prototype
Typed symbol graphs and rule-based decoding with MusicXML/MIDI export. Validation: two printed single-staff fixtures, 16 synthetic variants. Polyphonic and handwritten recognition remains future work.

Music Segment Boundary Toolkit | Human-in-the-loop MIR tool
Combines AI references, waveform-energy cues and lyric timing for boundary inspection and human confirmation.

Twelve-Tone Magic Cube | Interactive twelve-tone matrices and P/R/I/RI transformations

COLLABORATIVE RESEARCH

ReCoP: Reranking with Consensus-Gated Profiles for Shaanbei Folk-Song Lyrics Retrieval
Zhao, J., Guan, Q., **Dai, X.**, Li, S., Ban, Y., & Zhang, Y.
Collaborative research paper submitted to Transactions of the International Society for Music Information Retrieval (TISMIR), 2026.

HKUST AI Audio Annotation Project | Contributor | Jun 2026 - Jul 2026
Music-content annotation, quality review and data-standard documentation.

AI and Chinese Instrumental Music | National Arts Fund project | Sep 2025 - Present
Student contributor at Xi'an Conservatory; research documentation and outcome validation.

INNOVATION AND ENTREPRENEURSHIP LEADERSHIP

Xunpu Studio | Project Lead | 2026
Provincial College Student Innovation and Entrepreneurship Training Program (Da Chuang) | Provincial project lead; China International College Students' Innovation Competition | Shaanxi Silver Award, project lead.

Rhythm Intelligence | Challenge Cup Project Lead | 2026
Challenge Cup, Shaanxi Provincial Finals | Second Prize; project lead.

Xunpu Studio | CUIDC Project Lead | 2026
China Universities Industrial Design Competition.

PROFESSIONAL EXPERIENCE

Xi'an Huijing Shengchang Intelligent Technology Co., Ltd. | 2026 - Present
Founder of Huijing Shengchang / Huijing Soundscape; founded and led a 25-person AIGC short-form drama production team. Coordinated script, storyboarding, AI audiovisual generation, music, editing, delivery, revisions and creator review.

Taihe Music | Music Planning Intern | Jun 2025 - Sep 2025
Artist/song research, playlist planning and platform-data review.

Xinjiang Cultural Tourism Investment Group | Intern | Dec 2025 - Feb 2026
Content planning and AIGC audiovisual support; separate Kucha commission for the same group.

PATENTS AND SOFTWARE COPYRIGHTS

Published invention patent application: An Anomaly Detection and Correction Method for Symbolic Polyphonic Music Data Based on Heterogeneous Graph Neural Networks and Related Devices. CN202610254567.4 | Published 15 May 2026.
Patent application record: Twelve-Tone Magic Cube Generation Software | 2026200412635.
Registered software copyright: Twelve-Tone Magic Cube Generation Software V1.0 | 2026SR0486941 | 25 Mar 2026.

Other registered software copyrights:

Intelligent Strict Counterpoint Validation System
2026R11L0517860

AI Composition Studio Software
2026R11L2678400

Schoenberg Serial Composition Assistance System
2026R11L0517865

Chinese and Western Music History Learning and Retrieval Software
2026R11L2667337

Intelligent Musical Form Analysis and Correction Software
2026R11L0624510

Sight-Singing and Ear-Training Practice and Recording Correction Software
2026R11L2671940

Instrumentation Reference Retrieval Software
2026R11L2666714

Orchestration Suggestions and Scoring Assistance Software
2026R11L2668052

Polyphonic Counterpoint Correction Software
2026R11L2678392

Metronome Practice Software
2026R11L2678387

SELECTED TECHNICAL TRAINING AND VIRTUAL PROGRAMMES

Datawhale certifications (2026): Agent Engineering (Ant Group); LLM Fine-tuning Engineer (iFLYTEK / iFLYTEK Stars); Large Language Model Development Engineer (Inspur); LLM Engineering bootcamp (VirtAI Cloud).
Additional Datawhale training (2026): AI-assisted Programming (Doubao MarsCode); AI Data Analysis (SenseTime / Raccoon).
Forage virtual job simulations: Citi Investment Banking (Feb 2026); Mastercard Cybersecurity (Mar 2026).