

Tianyi Xu

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Technical Project Lead / Full-Stack Engineer / Technical Project Manager

PROFESSIONAL SUMMARY

Full-stack engineer and technical project lead with 5 years of experience delivering ToB business systems and digital delivery platforms. Strong hands-on background in Laravel + React, covering requirements assessment, architecture design, full-stack development, cloud deployment, stakeholder communication, and delivery acceptance.

Built CRM, private live-streaming, BIM/digital twin, and customer delivery systems from 0 to 1. Supported a financial internet business team growing from around 20 to 200 client managers, with systems processing 120,000+ sales leads and 970,000+ follow-up records. Also delivered digitalization projects for railway and power-sector scenarios, including BIM visualization, UE client integration, resource collaboration, and digital O&M platforms.

CORE SKILLS

Backend: PHP, Laravel, RESTful APIs, MySQL, Redis, Laravel Reverb, queues/scheduled jobs, RBAC and permission design

Frontend: React, TypeScript, Inertia.js, UmiJS, Tailwind CSS, shadcn/ui.

Engineering: System architecture, cloud deployment, performance tuning, API design, data statistics, background jobs.

Domains: CRM, landing pages, private live streaming, BIM visualization, UE Pixel Streaming, API integration, digital twin platforms.

Project Delivery: Requirements assessment, technical solution design, stakeholder communication, resource coordination, delivery acceptance, agile iteration, small-team collaboration.

PROFESSIONAL EXPERIENCE

China Railway Electrification Bureau Group Deputy Project Manager (Software) / Full-Stack Engineer | Jul 2023 - Present | Beijing

- Lead software delivery for BIM Center digitalization projects, reporting to the project manager and owning technical assessment, solution design, full-stack development, customer communication, delivery support, and daily project coordination tasks.
- Coordinate a 3-4 person working group across BIM visualization, resource collaboration, digital delivery, and O&M platform projects for railway and power-sector customers.
- Select and integrate BIM visualization routes, including high-fidelity UE rendering and lightweight web-based model rendering through Blackhole Engine.
- Build Laravel + React/Inertia.js/UmiJS platforms for model display, resource collaboration, permission management, document binding, and digital delivery scenarios.
- Integrate UE, Blackhole Engine, and related APIs to connect BIM models with panoramic images, O&M records, drawings, equipment data, and construction documents.
- Supported software design and delivery for Companhia de Electricidade de Macau (CEM, Macau Electric), Guangzhou-Zhanjiang Railway, Beijing-Shanghai High-Speed Railway power O&M, and Chizhou-Huangshan Railway BIM display projects.

Ruida Futures Co., Ltd. Software Engineer, Internet Finance Business | Jul 2021 - Jun 2023 | Shanghai

- Joined the early internet finance business team of Ruida Futures Shanghai branch and built core business systems including CRM, ad landing pages, and a private live-streaming platform.
- Owned end-to-end delivery from system design, full-stack development, Tencent Cloud procurement, ICP filing, deployment, and maintenance to ongoing feature iteration.
- Rapidly launched the first CRM and landing page version in around one week using Laravel + React/Inertia.js, then evolved the CRM to a React/UmiJS + Laravel architecture as the business scaled.
- Continuously improved lead acquisition, lead assignment, client-manager follow-up, and live operations workflows under limited budget, traffic spikes, and fast-changing business needs.

SELECTED PROJECTS

Ruida Futures Internet Finance CRM and Lead Automation System

Built a self-developed CRM and ad landing page system for an early internet acquisition business that needed to manage high-cost advertising leads, client-manager follow-up, and lead conversion workflows.

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- Independently owned CRM, landing pages, and cloud infrastructure, including Tencent Cloud procurement, ICP filing, architecture design, deployment, and continuous iteration.
 - Delivered the first CRM and landing page release in around one week using Laravel + Inertia.js + React; later refactored the CRM into a React/UmiJS + Laravel architecture.
 - Designed and implemented lead routing, automatic assignment, automatic recycling, client-manager follow-up records, and multiple landing page variants.
 - Optimized CRM and landing page performance for uneven ad-driven inbound traffic and peak access patterns.
 - Supported team growth from around 20 to 200 client managers, processing 120,000+ sales leads and 970,000+ follow-up records. The CRM remained in use until the headquarters unified system rollout, while the landing pages are still running.

Tech stack: Laravel, React, Inertia.js, UmiJS, MySQL, Redis, Tencent Cloud

Ruida Futures Private Live-Streaming Platform and 2026 Rebuild

Created a self-hosted live-streaming platform after the team found external SaaS pricing difficult to forecast under traffic and concurrency-based billing.

- Owned the full workflow from hardware selection and purchasing, director workflow design, staff training, cloud service procurement, system implementation, API integration, launch, and maintenance.
- Built live admin, viewer pages, comments, and online-user statistics with Laravel + Inertia.js + React.
- The system served 70,000+ clients and 1,000+ live sessions from 2022 to the 2026 rebuild, with long-term stable operation.
- Rebuilt in 2026 as an outsourcing, replacing legacy UI with shadcn/ui and introducing Laravel Reverb instead of polling.
- Moved statistics calculation to heartbeat/cache processing, improving smoothness and concurrency handling. Under similar server configuration, performance improved by roughly 3-5x, server cost was reduced by about 50%, and native App API integration was added.

Tech stack: Laravel, React, Inertia.js, shadcn/ui, Laravel Reverb, MySQL, Redis, Tencent Cloud

BIM Resource Collaboration and Digital Delivery Platform Portfolio

Delivered a set of related platforms for the BIM Center to move model resources, rendered images, panoramic photos, drawings, and delivery materials away from traditional file sharing into visual, permission-controlled digital platforms.

- Acted as deputy project manager and software lead for technical assessment, product construction, implementation, customer communication, and delivery support.
- Built resource collaboration features for BIM model display, uploads and edits, department/role-based sharing, panoramic photo coordination, and BIM family library sharing.
- Integrated UE and Blackhole Engine APIs to connect BIM models with O&M records, construction documents, drawings, and equipment information.
- Supported multiple projects with the same technical route, including internal collaboration platforms, Guangzhou-Zhanjiang Railway digital delivery, Beijing-Shanghai High-Speed Railway power O&M, and Chizhou-Huangshan Railway BIM display infrastructure.

Tech stack: Laravel, React, Inertia.js, UmiJS, MySQL, UE, Pixel Streaming, Blackhole Engine

Macau Electric Substation Digital O&M System

Built the software foundation for a digital transformation project that helps Macau Electric manage substations with long historical records, scattered documentation, and complex maintenance needs through a UE-based remote visualization client.

- Owned the software work excluding BIM modeling, including Laravel backend APIs, React/Inertia.js management backend, UE client API integration, and interaction logic.
- Expanded the previous web-to-UE integration pattern into direct UE client-to-backend API communication while keeping data synchronized with the web management backend.
- Studied UE runtime behavior and Blueprint logic to connect equipment data, station layout, photos, and maintenance records.
- Completed the software MVP in two months. First station have been put into use, with a planned rollout to another 20-30 substations.

Tech stack: Laravel, React, Inertia.js, UE, MySQL, RESTful APIs

EDUCATION

University of Shanghai for Science and Technology B.Eng. in Automation | Sep 2017 - Jun 2023 | Shanghai