

# Songtao Liu

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## Skills

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**Programming Languages:** JavaScript, TypeScript, Java, C#, React Native, Flutter, HTML, CSS

**Tools:** Git, Linux, React, Next.js, Tailwind CSS, Bootstrap, NextAuth.js, KeyCloak, Docker, Maven, Selenium, Jest

**Databases:** PostgreSQL, MySQL, MongoDB, Prisma, Mongoose, Firebase, SQLite, MSSQL Server

**Methodologies:** Object-Oriented Design, Agile, Unit Test, Server-Side and Client-Side Rendering, Incremental Static Regeneration

**Technologies:** User Authentication and Management, State Management, Data Fetching, Session Management, Word Embedding

## Projects

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### Full-Stack Blogging Platform with React 19, Express 5, and Clerk Authentication May 2025 – July 2025

- Developed a full-featured blogging platform using the MERN stack with React 19, Express5, and MongoDB.
- Implemented a responsive UI with Tailwind CSS, including a dynamic navbar, blog listing, post pages, and side menu.
- Integrated Clerk for user authentication, social login, and role-based authorization; protected backend API routes using Bearer Tokens and
- Built **RESTful APIs** with Express 5 and Mongoose, supporting full **CRUD operations**, comment system, media uploads, and page visit tracking.
- Utilized **React Query** for efficient **client-side caching**, **data fetching**, **optimistic updates**, **infinite scroll**, and **filtering**.
- Deployed the full-stack app to a VPS server using PM2 for production process management.

### Next.js 14 Full-Stack Blog and Admin Dashboard Application May 2025 – July 2025

- Built a full-stack blog and admin dashboard application using Next.js 14 with App Router and **Server Actions**.
- Implemented dynamic routing, shared layouts, and responsive UI with Tailwind CSS and CSS Modules.
- Integrated MongoDB for persistent storage and implemented data fetching with **Server Components** and **caching control** (e.g. no Store)
- Implemented authentication with Next Auth (social login and credentials), protected routes with middleware, and added admin dashboard functionality.
- Applied **SEO strategies** for both static and dynamic pages and handled hydration/rendering issues in Next.js 14.
- Gained hands-on experience with modern Next.js concepts such as ``useFormState``, ``useRouter``, **Suspense**, **server/client component interaction**, and more.

### School Management System (Full-Stack App with Next.js 15, Prisma, Clerk Auth) May 2025 – July 2025

- Built a full-featured school management system using Next.js 15, React, Prisma ORM, PostgreSQL, and Clerk authentication.
- Designed and implemented dashboards for Admin, Teacher, Parent, and Student roles with responsive UI built using Tailwind CSS and **chart visualizations** (Recharts).
- Created **dynamic forms** for managing students, teachers, subjects, classes, exams, events and announcements with **react-hook-form** and **Zod validation**.
- Integrated Clerk for authentication and implemented **role-based access control (RBAC)** with **protected routes** and **conditional data fetching** based on user role.
- Fetched and mutated relational data **using Prisma (nested queries, pagination, search filters)** and **built server actions for secure create/update/delete operations**.
- Deployed the application using Docker with PostgreSQL, and implemented **Cloudinary for image upload** and Toastify for notification.

## Education

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Diploma in Digital Media and IT - Computer Software Development

September 2023 – May 2025

Northern Alberta Institute of Technology

Edmonton, Canada

- GPA: 3.65 / 4.0

- Honors: Dean's Honour Roll (December 2023, May 2024, December 2024)

**Bachelor of Economics**

**Zhengzhou University**

**September 2016 – July 2020**

**Zhengzhou, China**