

Zejun Hu

Electrical Engineer · AI-Augmented Software Engineering /
Web 3D / Embedded & DSP

Tianjin · Last updated Aug 2026

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Professional Profile

M.S. graduate in Electrical Engineering working across embedded systems, digital signal processing, machine learning, and Web 3D. I integrate AI agents into real engineering workflows through explicit constraints, structured context, task decomposition, and automated verification, turning complex requirements into maintainable and reproducible products.

AI-AUGMENTED
ENGINEERING

WEB 3D & PRODUCT
DEVELOPMENT

ELECTRONICS &
INTELLIGENT SYSTEMS

PROJECTS

huzejun.com: Bilingual Personal Archive & Native Web 3D Home

Feb 2026 — Aug 2026

Independent Design & Development · AI-Agent-Assisted Engineering · Tianjin · huzejun.com

- Built a static-first bilingual personal archive from the ground up, unifying blog, photography, calligraphy, and résumé content with Next.js App Router, strict TypeScript, Velite, MDX / YAML, and next-intl; delivered through Vercel and Cloudflare R2.
- Created an interactive 3D Studio home with a Blender source-of-truth asset pipeline and one native Three.js renderer; engineered a composition-stable poster-to-first-frame handoff plus complete Classic fallbacks for mobile, reduced motion, WebGL failure, and context loss.
- Implemented an in-room Monitor OS, photography archive experience, music-card ring, and direct-manipulation Rubik and badge interactions; used AGENTS.md, ADRs, and domain docs to coordinate multi-agent research, implementation, and review, then gated delivery with a 3D manifest, hashes, license ledger, asset verification, 300+ automated tests, and production builds.

Next.js

TypeScript

Three.js

Blender

AI Agents

STM32-Based Embedded System for Parkinson's Motor Symptom Detection

Oct 2025 — Dec 2025

Embedded Development Lead · New York, NY

- Designed embedded motion-state classification logic to distinguish three typical Parkinson's motor states: Tremor, Dyskinesia and FOG (Freezing of Gait)
- Integrated a Bluetooth Low Energy (BLE) module for wireless transmission of detection data and results

Smartwatch ECG Module Design

Jul 2023 — Sep 2023

Simulation Development Lead · Remote

- Designed a low-power, high-gain ECG signal acquisition circuit in LTspice, optimizing MOSFET, OTA and noise performance
- Achieved differential gain of 45 dB, power consumption of 4.83 μ W, and input-referred noise of 3.23 μ V

Magnetic-Resonance-Coupled Aerial & Ground Self-Service Wireless Charging UAV System

Jan 2019 — Dec 2019

Project Lead · WHUT Physics Innovation Lab · Wuhan, China

- Optimized transmitter / receiver coil structures and ran FEKO simulations; designed a high-precision GPS + optical-flow sensor fusion algorithm to improve wireless energy transfer efficiency and UAV hovering precision
- Organized multiple rounds of system testing, addressing wireless energy attenuation, impedance matching and inter-UAV relative positioning
- Achieved autonomous return-to-charge when battery dropped below 30%, and real-time aerial UAV-to-UAV power replenishment

EXPERIENCE

Engineering Assistant · Smart Mining Department

Jul 2022 — Dec 2022

MCC Wukan Zhicheng (Wuhan) Engineering Technology Co., Ltd. · Wuhan, China

- Deployed and integrated six unmanned-weighbridge access-control gates at Jiangxia Wulongquan Mine, troubleshooting joint face/license-plate recognition, barrier sequencing, and cross-system data exchange through production launch.
- Owned functional verification and third-party UX improvements for the WeChat Official Account, wrote the user manual, and led operator training to close the loop from testing to adoption.
- Remotely provisioned the cloud development environment for the Anhui Changjiu Limestone Mine truck-dispatch system; edited vehicle waypoints and diagnosed routing anomalies in dispatch logic.

EDUCATION

NYU Tandon School of Engineering

Sep 2024 — Jan 2026

M.S. in Electrical Engineering · New York, NY

- GPA 3.62 / 4.00
- Coursework: Digital Signal Processing, Machine Learning, Computer System Architecture, Embedded Systems

Wuhan University of Technology, School of Science

Sep 2018 — Jun 2022

B.S. in Electronic Information Science and Technology · Wuhan, China

- GPA 3.61 / 5.00
- Coursework: Analog & Digital Electronics, Communication Principles, Data Structures & Algorithms, Object-Oriented Programming

RESEARCH

ECG Signal Classification Based on CNN Deep Learning

Aug 2023 — Oct 2023

Sole Author · CONF-CIAP 2024 (3rd International Conference on Computing Innovation and Applied Physics)

- Designed a 10-layer 1D CNN trained on the MIT-BIH database for automated ECG signal classification
- Achieved 99.43% accuracy, 97.86% sensitivity and 99.64% specificity on the test set
- Paper accepted with DOI 10.54254/2753-8818/13/20240838

INTERNSHIP

Professional Internship

Sep 2021 — Oct 2021

Wuhan Research Institute of Posts and Telecommunications (Fiberhome Telecom Tech Academy) · Wuhan, China

- Simulated NB-IoT smart streetlight and smart farm applications on Huawei Cloud, implementing remote control and environmental monitoring
- Designed and calculated 5G indoor coverage; built an enterprise network simulation of 89 PCs using Cisco

ACTIVITIES

Vice President

Sep 2019 — Jun 2020

Amateur Radio Association · Wuhan University of Technology · Wuhan, China

- Led club promotion and recruitment, reaching 600+ dorm rooms and bringing in 46 new members
- Organized general member meetings and lab project promotion, recruiting 5 new members into the Physics Innovation Lab
- Managed reimbursement of nearly ¥100,000 in school- and national-level innovation project funding

HONORS & AWARDS

- NYU Admission Scholarship (2024)
- WHUT Third-Class Scholarship (2020), Social Scholarship (2020), Merit Student of School of Science (2020, 2021)
- Third Prize, 19th "Innovation Cup" College Extracurricular Academic & Sci-Tech Works Competition, Math & Information category (Dec 2019)

SKILLS

AI & AGENTS

OpenAI Codex · Context engineering · Multi-agent task decomposition · Test-driven verification · Documentation-driven development

WEB & 3D

TypeScript · React · Next.js · Three.js · Blender · Tailwind CSS · Framer Motion · Velite / MDX

PROGRAMMING & INTELLIGENT SYSTEMS

Python · C / C++ · JavaScript · Machine Learning · Digital Signal Processing

EMBEDDED & ENGINEERING TOOLS

STM32 · BLE · LTspice · FEKO · Git · Cloudflare R2 · Vercel

LANGUAGES

IELTS 7.0 · GRE 317 · CET-6 534