

ZEJUN HU

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EDUCATION

New York University | Tandon School of Engineering

Sep 2024 - Jan 2026

M.S. in Electrical Engineering | GPA: 3.62/4.00 | New York, NY

Selected coursework: Digital Signal Processing, Machine Learning, Computer Architecture, Embedded Development.

Wuhan University of Technology | School of Science

Sep 2018 - Jun 2022

B.S. in Electronic Information Science and Technology | GPA: 3.61/5.00 | Wuhan, China

Selected coursework: Digital/Analog Circuits, Data Structures and Algorithms, Object-Oriented Programming.

WORK EXPERIENCE

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

Jul 2022 - Dec 2022

Engineering Assistant | Smart Mining Department | Wuhan, China

- Commissioned 6 access-control installations for Wulongquan Mine; troubleshoot face/license-plate recognition and data exchange between access gates, vehicle barriers and unmanned weighbridges.
- Tested WeChat functions, improved usability, wrote operating manuals and trained mine staff for rollout.
- Set up a cloud development environment for Changjiu Mine's truck-dispatch system; debugged vehicle waypoints and route-planning issues.

PROJECTS

huzejun.com | Bilingual Content Platform and Interactive 3D Homepage

Feb 2026 - Present

- Independently designed and built a bilingual blog, photography and calligraphy platform with Next.js, React, TypeScript and Vite; implemented browsing interactions and deployed through Vercel and Cloudflare R2.
- Used Codex and Claude Code for AI-assisted development and MCP to control Blender modeling; implemented object picking, camera focus and in-scene reading with Three.js/WebGL2, using Meshopt and KTX2 compression.
- Added poster-to-3D transitions and 2D fallbacks for mobile devices and rendering failures; cut the calligraphy navigation index size by 56.7% and verified equivalent navigation behavior across 1,425 comparisons.
- Built a local content console with structured editing, publishing queues, diffs and automated checks; guarded Git publishing with source validation, path-restricted commits and in-process write rollback.

STM32 Parkinsonian Movement Monitoring Prototype

Oct 2025 - Dec 2025

- Led embedded development using STM32, Mbed and C++; sampled an LSM6DSL at 52 Hz and combined 3-second windows, 256-point FFTs and time-domain features to heuristically detect tremor, dyskinesia and freezing.
- Separated acquisition, detection, indication and communication modules; defined 4 BLE GATT characteristics for metric reads, notifications and re-advertising after disconnection in a course prototype.

Wearable ECG Analog Front End | Team Lead, 3 Members

Jul 2023 - Sep 2023

- Performed all LTspice circuit simulations, modeling a three-op-amp instrumentation amplifier, driven-right-leg circuit and electrodes; tuned OTA/MOSFET and passive components for amplification and 50 Hz common-mode interference.
- Achieved nominal simulated results of ~45 dB gain, 0.11-249 Hz bandwidth, 4.83 μ W power and 3.23 μ V RMS input-referred noise at 1.6 V, meeting the <5 μ W power and <4 μ V RMS noise targets.

License Plate Character Recognition under Occlusion | Undergraduate Thesis

Sep 2021 - Jun 2022

- Used Python/OpenCV for perspective correction and character segmentation; assembled ~1.27 million character images with 5 local-blur occlusion settings and unoccluded controls.
- Built a TensorFlow CNN with three convolutional layers and a visual interface for plate localization and character recognition; achieved 90.04% character accuracy on 17,757 mixed unoccluded and simulated-occlusion test images.

RESEARCH

ECG Signal Classification Based on CNN Deep Learning

Aug 2023 - Oct 2023

Sole Author | Accepted at CONF-CIAP 2024 | DOI: 10.54254/2753-8818/13/20240838

- Prepared ~92,000 MIT-BIH single-lead heartbeats using wavelet denoising and beat segmentation; built a five-class TensorFlow/Keras CNN with 4 Conv1D layers.
- Achieved 99.43% validation accuracy (27,501/27,658) with a 70:30 random beat-level split, not patient-independent testing; analyzed the confusion matrix and authored the paper.

TECHNICAL SKILLS

Programming and Web: Python, C/C++, Git, React, Next.js, TypeScript, HTML/CSS/JavaScript, debugging

Deep Learning: TensorFlow/Keras, CNNs, OpenCV, data processing, signal preprocessing, model evaluation

AI-Assisted Development: Codex, Claude Code, MCP tool use, Skills-based workflows

LANGUAGE AND TEST SCORES

English: IELTS 7.0; CET-6 534 | GRE: 317

HONORS AND AWARDS

New York University: Entrance Scholarship (2024).

Wuhan University of Technology: University Third-Class and Social Scholarships (2020); College Outstanding Student (2020, 2021); Third Prize, 19th Innovation Cup, Mathematics & Information (2019).