HUAZHONG UNIVERSITY OF SCIENCE AND TECHNOLOGY

JIE DAI



Cellular senescence & skin aging / Omics / AI-assisted research

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Clinical medicine doctoral student (2027) studying cellular senescence, skin and hair follicle aging; co-first author (listed second) of a submitted manuscript.

Education

Tongji Medical College, Huazhong University of Science and Technology Graduating 2027
Doctoral Studies in Clinical Medicine (Plastic Surgery), Union Hospital Sep 2024–Present
Bachelor's Degree in Clinical Medicine Sep 2019–Jun 2024

Research Experience

DLP-Printed Graded Metamaterial Hydrogel Scaffolds Jun 2025–Oct 2026
Adipose tissue regeneration | Co-first author (listed second); manuscript submitted.

- **Analyzed and visualized single-cell data** (study dataset: 28,563 cells); contributed to study design discussions and methodological feasibility assessment.

BGI-Research Hangzhou | Cell Research Intern Jan 2026–Jul 2026
Hospital-side contributor to multi-omics and virtual-cell research on age-related scalp hair graying and vitiligo.

- Completed **spatial-omics data annotation, alignment and cell segmentation**; contributed to experiments.

Microvascular Homeostasis and Skin Aging | Key Contributor Jun 2025–Present
Study cellular senescence in skin aging; contribute to study design, **bioinformatics/data analysis** and the development of cell and animal models.

Hair Follicle Organoid Exosomes and Follicular Aging | Key Contributor Sep 2025–Present
Investigate exosomes in follicular aging; contribute to study design, **exosome isolation and characterization**, and the development of cell and animal models.

Union Hospital internship: clinical rotations, PBL and case discussions. Sep 2024–Jan 2026

AI-Assisted Coding & Research Platforms

Pilotus Studio | Founder
Formed a **four-person team** with diverse backgrounds; developed **platform showcase pages** and managed **SOP content** for a local research services platform (pilotus.shop.studio).

- **Web & Research Tools:** Built personal website pages and **biotools, a bioinformatics visualization tool**, with Claude Code CLI and Codex; manually reviewed AI outputs.
- **Virtual-Cell Modeling:** Trained a **ridge-regression model** for the 2026 Virtual Cell Competition; used AI agents to support bioinformatics analysis and ML/DL modeling practice.

Technical Skills

Data & Computing: Bioinformatics and multi-omics; R, Python, Git; Linux and server environments.
Laboratory: Cell culture, Western blotting, PCR/qPCR, IHC, flow cytometry and mouse models.
Language & Training: CET-6: 549; GCP and laboratory animal training certificates.

Conference Presentations

Chinese Medical Association, Plastic Surgery Branch | Presentations
Beijing (2025): "Fourteen Biomarkers of Aging and Anti-aging Therapies."
Shenyang (2026): "Mechanisms of Skin Aging Driven by Vascular Endothelial Senescence."

Westlake × Nature Conferences: Stem Cells Across the Lifespan (2025)
Poster: "Single-cell Omics Analysis of Endothelial Cell Heterogeneity."

Leadership & Honors

Lab Setup: Procured refrigerators and liquid nitrogen tanks; coordinated with lab/university staff. 2025
Tongji Football Association | Founder 2024–2025
Tongji Cup: runner-up (2022, 2026), third place (2025); **Grade III Football Referee (China)**.