

Jason Lai

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PROFESSIONAL SUMMARY

UCLA Oral and Maxillofacial Radiology resident combining clinical excellence (2,000+ CBCT interpretations) with hands-on AI development, including CBCT model training for Pearl AI and computer vision research. Self-taught clinical developer leveraging modern AI coding tools to rapidly build workflow automations and full-stack ML prototypes, bridging clinical practice and technology.

EDUCATION

Certificate in Oral and Maxillofacial Radiology | University of California, Los Angeles 2024 – 2026
Doctor of Dental Surgery (DDS) | University of California, Los Angeles | *10 Course Honors* 2020 – 2024
Bachelor of Science, Health Science | Northeastern University | *Summa Cum Laude*, GPA: 3.94 2015 – 2020

RESIDENCY EXPERIENCE

Chief Resident, Oral and Maxillofacial Radiology | UCLA School of Dentistry 2024 – Present

- Interpret 2,000+ CBCTs across complex oral and maxillofacial pathology to guide treatment planning
- Saved 750+ staff hours annually by auditing workflows, eliminating deprecated processes, and building automated report and case distribution systems used daily by 6 staff, which transitioned the department to nearly paperless operations
- Improved resident report quality by building a web-based learning platform to track and display faculty feedback for continuous improvement
- Educate faculty, residents, and alumni by delivering continuing education lectures on pathology cases, artificial intelligence, and efficient workflows

ARTIFICIAL INTELLIGENCE & TECHNOLOGY

Lead Developer | Deep Learning Classification of Maxillary Canine Impaction Severity on CBCT 2024 – Present

- Rebuilt a failing deep learning pipeline by replacing a 3-layer CNN with DenseNet-121, introducing CORAL ordinal loss and multi-view fusion, achieving 87.5% accuracy (0.953 AUC) for 3-class severity classification. First study to use multi-view CBCT fusion for canine impaction.
- Developed and managed full data pipeline across 4 CBCT views and implemented rigorous 5-fold stratified group cross-validation, correcting evaluation methodology from single train/test split.

Co-Investigator | TMJ Segmentation and Classification Study 2025 – Present

- Advancing TMJ diagnostic research by collaborating with UCLA Orthodontics on deep learning study to detect degenerative changes across longitudinal CBCT scans from a 3,600+ patient dataset
- Built end-to-end data infrastructure for 3,600+ patient dataset: anonymization pipeline with cross-timepoint linking, automated image extraction, and NLP framework to convert unstructured reports into structured diagnostic parameters
- Coordinating dental student annotation team and created gold-truth annotation workflows and label taxonomies for model training validation

Clinical AI Specialist | Pearl AI 2024 – Present

- Contributed to first 3D deep learning classifier for TMJ osteoarthritis on CBCT (82% accuracy, 81% F1-score) by performing expert annotation on 800+ scans and shaping methodology across multiple projects
- Contributed radiographic expertise to FDA 510(k) regulatory submissions and diagnostic validation across multiple models

Independent Research | Deep Learning for CBCT Segmentation 2025 – Present

- Trained a 3D CBCT segmentation model achieving 80.7% Dice score using open-source data and agentic AI development tools
- Awarded 1st place at UCLA Clinical Research Day 2026 for poster presentation: Democratizing Dental AI: Agentic Development of a CBCT Segmentation Model

Solo Developer | Teleradiology Platform 2025 – Present

- Built a full-stack radiology portal prototype for remote CBCT interpretation by implementing automated workflows for scan intake, payment, invoicing, and case distribution, streamlining practice operations
- Developed a custom CBCT viewer with real-time multi-user viewport sync for live consultations by building on Cornerstone3D and WebSockets
- Built a voice dictation system for dental CBCT reporting by integrating local Whisper STT with a fuzzy-matching correction dictionary, achieving accurate dental terminology recognition where Amazon Transcribe failed
- Implemented retrieval-augmented generation over 568 structured TMJ reports, research papers, and textbooks by embedding with Nomic into ChromaDB, enabling LLM-generated reports grounded in real clinical language

PUBLICATIONS AND POSTER PRESENTATIONS

Multi-View Deep Learning for Classification of Maxillary Canine Impaction Severity | In preparation 2026

Democratizing Dental AI: Agentic Development of a CBCT Segmentation Model | UCLA Research Day 2026

Deep Learning for TMJ Osteoarthritis Diagnosis on CBCT Scans | AAOMR Annual Session 2025

Incidental Radiographic Findings: Carotid Artery Calcifications | UCLA Research Day 2025

Intraosseous Vascular Malformation of the Left Maxilla | AAOMR Annual Session 2023

LEADERSHIP AND TEACHING

Board of Councilor's Leadership Institute Scholar | UCLA School of Dentistry 2024

Humanitarian Mission Volunteer Lead | GreatShape Inc. 2023

Delivered dental care to 800+ underserved patients by raising \$15,000+ and leading 50 volunteers in Negril, Jamaica

Social Chair | Associated Student Body, UCLA School of Dentistry 2022-2023

Lab Instructor and Lecturer | Basic Dental Principles, UCLA School of Dentistry 2023 – 2024

Educated 150 pre-dental students by creating and delivering lectures on Endodontics and Dental Anesthesia

Additional Roles 2021 – 2024

*Lecture Coordinator (Oral Radiology Study Club), Vice President (Hospital Based Dentistry Club), Pre-Clinic Teacher ☺
Pre-dental Outreach Mentor (UCLA ASDA)*

SELECTED AWARDS

1st Place in Clinical Research | UCLA Research Day 2026

Albert G. Richards Research Award | Academy of Oral and Maxillofacial Radiology 2025

Stuart C. White Section of Oral and Maxillofacial Radiology Award | UCLA School of Dentistry 2024

David and Miki Lee Scholarship for Academic Excellence and Leadership | UCLA School of Dentistry 2024

Dental Student Outreach Scholarship | San Gabriel Valley Dental Society 2023

CERTIFICATIONS & PROFESSIONAL DEVELOPMENT

Imaging AI Advanced Certificate | Radiological Society of North America (RSNA) 2025

2nd Global Symposium on Artificial Intelligence in Dentistry | Harvard School of Dental Medicine 2025

Manuscript Reviewer | Oral Radiology Journal 2024 – Present

Member | American Academy of Artificial Intelligence in Dentistry (AAAI-D) 2025

Continuing Education Committee | American Academy of Oral and Maxillofacial Radiology 2025 – Present

Residents Committee | American Academy of Oral and Maxillofacial Radiology 2025 – Present

PERSONAL INTERESTS

Meditation, Scuba Diving, Golf, Volleyball, Travel, Reading

TECHNOLOGIES LEVERAGED

ML & Computer Vision: nnUNet, PyTorch, DenseNet, OpenCV, SimpleITK

Full-Stack Development: React, Python (FastAPI), WebSockets

Specialized AI & Medical: Cornerstone3D, ChromaDB, Whisper STT, LLM Integrations