Jisoo (Allison) Chae

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Statement of Purpose

I am a medical student interested in diagnostic radiology and leveraging technology to improve human health. I am passionate about developing responsible and ethical AI to improve patient outcomes and equitable care. My research focuses on exploring clinical applications of up-and-coming technologies to radiologist workflows, and how we can automate medical imaging interpretation for clinical diagnosis.

Education

2021 – Present **University of Pennsylvania** – Philadelphia, PA
MD Candidate
Advised by Hersh Sagreiya and Walter Witschey. Recipient of the 2023 AΩA Carolyn L. Kuckein Student Research Fellowship. *USMLE Step 2 CK: 264. USMLE Step 1: Pass.*

2017 – 2021 **University of Southern California** – Los Angeles, CA
BA in Biology, Minor in Accounting
Advised by Bérénice Benayoun. *GPA: 3.90.*

Activities

2022 – Present Research Fellow, **Advanced Cardiovascular Imaging Lab**
University of Pennsylvania
Implemented fully supervised and interpretable deep learning models to predict patient Type 2 Diabetes risk from abdominal CT scans, and explored topological metrics to assess model generalization capacity to out-of-domain distributions. Supported by the Diagnostic Radiology Research Fellowship at the University of Pennsylvania.

2024 – Present Author, **Ethical Algorithms for the Modern Clinician**
University of Pennsylvania
Wrote a learning module for medical students at the University of Pennsylvania discussing ethical algorithm usage and human-computer interaction with machine learning systems in clinical workflows.

2021 – 2022 Chair, **Radiology Interest Group**
University of Pennsylvania
Organize career panels and networking events for medical students interested in applying for residency in diagnostic radiology.

2021 – 2022 Board Member, **SONO Ultrasound Interest Group**
University of Pennsylvania
Host regular ultrasound scanning sessions for first-year medical students, ultrasound scanning competitions, career panels, and outreach ultrasound tutorials for high-school and college students.

2021 – 2022 Research Fellow, **Radiology AI Lab**
Brown University
Investigated trends in FDA-cleared AI algorithms for medical imaging. Conducted a retrospective study that analyzed 510(k) summaries and de novo request submission data using Microsoft Excel and Python.

2021 – 2022 Product Strategist, **Sentinel Cloud**
Lead design and feature development of a web-based EHR. Conduct market research to identify the company's target market and overall industry trends.

2021 Consultant, **Penn Biotech Group**
University of Pennsylvania
Part-time consultant for a Series A medical imaging startup. Assessed the clinical limitations of currently available imaging modalities and their cardiovascular indications.

2020 – 2021 Senior Content Developer, **Blueprint Test Prep**
Planned, developed and launched the MCAT Live Online Course that has made $8+ million in revenue to date. Helped redesign content team management structure through advocating for Scrum workflow adaptation, and implementation of OKR's and Sprint management tools.

Honors and Scholarships

2023 AΩA Carolyn L. Kuckein Student Research Fellowship (Alpha Omega Alpha Society)
Year-long research award funded by the AΩA Honor Society to interrogate the use of radiologic AI algorithms for the diagnosis of metabolic disorders.

2022 Diagnostic Radiology Research Fellowship (University of Pennsylvania)
Summer research fellowship to support research in developing machine-learning methods for disease risk prediction using medical imaging.

2019 German Academic Exchange Service (DAAD) Research Internship (Universität Carl Gustav Carus Dresden)
Research fellowship funded by the German government to investigate novel therapeutic approaches for congenital adrenal hyperplasia.

2019 Provost Undergraduate Research Fellow (University of Southern California)
Research fellowship to support undergraduate research in inflammatory mechanisms and pathway control.

Publications

2024 **Evidence Is All You Need: Ordering Imaging Studies via Language Model Alignment with the ACR Appropriateness Criteria**. Under peer review. Preprint
Yao MS, **Chae A**, Kahn CE, Witschey WR, Gee JC, Sagreiya H*, Bastani O*.

2024 **Strategies for Implementing Machine Learning Algorithms in the Clinical Practice of Radiology**. Published in Radiology
Chae A*, Yao MS*, Sagreiya H, Chatterjee N, MacLean MT, Duda J, Elahi A, Borthakur A, Ritchie MD, Rader D, Kahn C, Witschey WR, Gee J.

2023 **SynthA1c: Towards Clinically Interpretable Patient Representations for Diabetes Risk Stratification**. Published in PRIME MICCAI
Yao MS*, **Chae A***, MacLean MT, Verma A, Duda J, Gee J, Torigian DA, Rader D, Kahn C, Witschey WR, Sagreiya H.

2022 **Trends in Clinical Validation and Usage of FDA-Cleared AI Algorithms for Medical Imaging**. Published in Clinical Radiology
Khunte M, **Chae A**, Wang R, Jain R, Sun Y, Sollee JR, Jiao Z, Bai HX.

Talks and Tutorials

Oct 2022 Augmenting Type 2 Diabetes Mellitus Risk Prediction Models with Learning-Based Methods for Medical Image Analysis
SIIM Conference on Machine Intelligence in Medical Imaging

May 2019 Deciphering the Transcriptional Landscapes of Aging Macrophages
USC Undergraduate Research Symposium

Mentoring and Outreach

2024 – Present **Diagnostic Ultrasound Instructor**, University of Pennsylvania

2024 – Present **Clerkship Prep TA**, University of Pennsylvania

2020 – 2022 **Crisis Text Line**, Volunteer Crisis Counselor

2018 – 2020 **USC Community Health Involvement Project**, Executive Board Member

2018 – 2020 **USC Trojan Tutoring Program**, Volunteer Tutor

2017 – 2019 **Cedars-Sinai Medical Center**, Hospital Volunteer