Adrian Tsang

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MEDICAL IMAGING | AI ENGINEERING | DATA SCIENCE

EXECUTIVE PROFILE

Imaging scientist and AI engineer with 10 years of experience across biotechnology, medical devices, and translational health research. Deep expertise in MRI and CT imaging, machine learning, clinical data pipelines, imaging biomarker development, and deployment of scalable AI systems in regulated and research environments. Proven record translating imaging and data science innovation into clinically relevant tools, including contributions supporting FDA 510(k) clearance, real-world evidence generation, and imaging workflows for neurology and cardiovascular disease. Recognized for cross-functional leadership spanning R&D, clinical, regulatory, software engineering, and external research partnerships.

CORE STRENGTHS

- Medical imaging AI and algorithm development
- MRI and CT image analysis
- Clinical imaging biomarker development
- Deep learning for segmentation and detection
- Data curation, quality control, and validation
- Real-world data and clinical research pipelines
- AI deployment and inference optimization
- Translational science for biotech and medtech
- Cross-functional leadership in regulated environments
- Scientific communication and external collaboration

TECHNICAL SKILLS

Programming: Python, C++, MATLAB, MySQL, PyTorch
AI / Data Science: Deep Learning, Model Validation, Training Data Curation, Performance Evaluation, Statistical Analysis, Data Visualization
Medical Imaging: MRI, CT, Imaging Biomarkers, Image Processing, FSL, FreeSurfer, 3D Slicer, ITK
Infrastructure / Tools: Docker, AWS, Triton Inference Server, TensorRT, GitHub, Jira, HPC, Agile Development
Research / Clinical: Clinical Imaging Studies, Real-World Evidence, Data Governance, Data Management, CRO Collaboration, Scientific Writing and Presentation

PROFESSIONAL EXPERIENCE

Elucid — Boston, MA
Principal AI and Imaging Engineer | Feb 2022 – Apr 2026

- Supported FDA 510(k) clearance efforts by validating quantitative atherosclerotic plaque algorithm measurements against histology ground truth for software used in coronary artery disease assessment.
- Curated imaging training datasets and evaluated model performance for an nnU-Net–based deep learning pipeline for automated coronary vessel extraction from CTA, improving reproducibility and efficiency of case analysis.
- Improved scalability and runtime performance of AI deployment by implementing a GPU-enabled Triton Inference Server ensemble pipeline and converting PyTorch models to TensorRT for optimized inference.
- Developed internal software tools for batch processing of clinical datasets and visual review of algorithm updates, reducing manual effort and accelerating development and evaluation cycles.
- Partnered across imaging, AI, software, and clinical teams to advance production-grade imaging algorithms in a regulated medical device environment.

Biogen — Cambridge, MA
Principal Imaging Scientist | Oct 2016 – Feb 2022

- Served as subject matter expert in imaging analysis and biomarker development within the evidence generation solutions team.
- Collaborated on development of an ML/AI method to reduce false-positive multiple sclerosis lesions in an imaging analysis prototype, enabling therapy discovery research and improving patient outcome assessment.
- Provided imaging domain leadership to clinical development teams to advance AI-enabled biomarker discovery programs in multiple sclerosis.
- Led end-to-end execution of two clinical imaging studies, including site onboarding, CRO oversight, endpoint analysis, and clinical study report preparation.
- Helped build a real-world evidence program across 10 hospitals by standardizing MRI acquisition protocols in partnership with internal teams, clinical sites, and external vendors.
- Designed and implemented a workflow to ingest standardized MRI data from 10 hospitals, creating a real-world dataset of 20,000 brain MRI studies from patients with multiple sclerosis.
- Developed an MRI-based brain segmentation workflow and a novel brain parenchymal fraction metric to quantify brain atrophy in multiple sclerosis.
- Supported integration of an MRI analysis tool into radiology workflows at 3 hospitals, helping translate imaging biomarkers into point-of-care support for diagnosis and disease monitoring.
- Established normative reference ranges for MRI-based atrophy metrics using public datasets to improve interpretation of disease severity.
- Built tools to curate, share, and analyze clinical MRI datasets with investigators, contributing to real-world evidence research presented in 26 scientific conference presentations.
- Evaluated feasibility and accuracy of an in-house ARIA detection imaging tool for Alzheimer's disease in a Phase 3 clinical trial, supporting Aducanumab launch readiness.

University of Calgary — Calgary, AB, Canada
Postdoctoral Fellow | Jan 2015 – Oct 2016

- Conducted interdisciplinary image science research focused on stroke, vascular disease, human neurodevelopment, and traumatic brain injury.
- Designed a custom brain MRI analysis pipeline that resulted in a first-author peer-reviewed publication.
- Contributed to a cross-institutional research program resulting in multiple co-authored peer-reviewed publications.
- Reduced lab operating costs by securing external salary funding and leveraging high-performance computing resources for large-scale image processing.
- Mentored trainees in brain imaging research, poster development, and scientific presentation.
- Organized and led workshops on image processing and statistical analysis for graduate students and researchers.

EDUCATION

Ph.D. in Biomedical Engineering
University of Alberta — Edmonton, AB, Canada | Jan 2007 – Dec 2013
Dissertation: Sodium MRI of the human brain and application to ischemic stroke

B.Sc. in Computer Engineering
University of Ottawa — Ottawa, ON, Canada | Jan 1995 – Dec 1999

SELECTED VALUE PROPOSITION

- Combines medical imaging expertise, AI engineering, and data science in a single leadership profile.
- Experienced across both industry and academic research settings.
- Brings a unique blend of clinical imaging knowledge, algorithm development, and deployment engineering.
- Strong fit for biotech, medical devices, digital health, and health science research institutions.
- Translates complex technical work into clinically and commercially meaningful outcomes.