

Title: Radiographic Radiomics Phantom Progress Report 1

Date: 9/4 - 9/11

Client: Dr. Jenny Crosby

Advisor: Yang Lu

Team:

Last Name	First Name	Role	E-mail	Phone	Office Room/Building
Trapskin	Pierson	Leader	Pierson Trapskin	(608) 335-7986	
Hodgson	Ava	Communicator	Ava Hodgson	(289) 968-7479	
Stellflue	Presley	BSAC	Presley Stellflue	(847) 224-7803	
Pionek	Sonja	BWIG	Sonja Pionek	(608) 622-2590	
Casas	Matthew	BWIG	Matthew Casas	(262) 290-8734	
Ma	Allie	BPAG	Allie Ma	(781) 990-8825	

Problem Statement

The goal of this project is to design and construct a radiomics benchmarking phantom for radiographic imaging systems that includes multiple clinically relevant textures, accommodates both small- and large-anatomy imaging protocols via a removable core or

interchangeable sizing, and uses materials stable enough for repeated use over multiple years.

Brief Status Update

This week the team arranged an initial meeting with our advisor, Yang Lu, and began individual research into existing radiomics phantom designs and relevant literature. No expenses have been incurred to date. As this is the first week of the project, no prior goals or timeline deviations apply.

Difficulties / Advice Requests

What is our budget?

Do you suggest we go for 2 sizes or a removable core?

Are there specific materials that might be economically efficient that we can look into?

Will we have access to imaging equipment for testing purposes?

Client Specific Questions

What radiomics extraction software or pipeline does the advisor/client expect us to use for evaluating the phantom?

Is there a target set of radiomic features or a specific clinical application (e.g., a particular cancer type's texture) we should be benchmarking against, or is this meant to be general-purpose?

Current Design

N/A

Materials and Expenses

Item	Description	Manufacturer	Mfg Pt #	Vendor	Vendor Cat#	Date	#	Cost Each	Total	Link
Category 1										
N/A									\$0.00	
									\$0.00	
Category 2										
N/A									\$0.00	
									\$0.00	
								TOTAL:	\$0.00	

Goals

Major Team Goals for the Next Week (09/14-09/20)

1. Create an actionable plan for each team member to start research and modeling.
2. Schedule a meeting with our client.
3. Start setting our timeline and deadlines for individual tasks.

Next Week's Individual Goals (09/14-09/20)

- Pierson Trapskin: Start working on the PDS and researching specifics about how imaging machines work and how materials are differentiated.
- Ava Hodgson: Accumulate patents, research documents, existing design specification documents, etc., to begin to develop/sketch prototype ideas.
- Presley Stellflue: Begin doing research on imaging machines and the materials commonly associated with them. Begin brainstorming possible solutions for the project and ideas.
- Matthew Casas: Research existing radiomics phantom designs and potential materials that could provide heterogeneous, tissue-like textures while remaining stable for repeated radiographic imaging.
- Sonja Pionek: Conduct individual research on imaging technology, specifically the design process, important components, and useful applications. Start to develop ideas for solutions corresponding to the PDS.

- Allie Ma: Conduct literature research to understand the developmental process of phantoms and maybe how radiomics converts CT scans into imagery that can be analyzed.
Find and compare imaging protocols for head, pelvis, and perhaps other parts of the body.
Mark down phantom development procedures for upcoming discussion(s). If time, also look into standards for radiomics/phantom development.

Timeline

Task	Sep				October					November				December	
	4	11	18	25	2	9	16	23	30	6	13	20	27	4	11
Project R&D															
Empathize	X	X													
Background...															
Prototyping															
Testings															
Deliverables															
Progress Reports	NA	X													
Prelim presentation					DUE										
PDS			Draft Due												
Design Matrix				Due											
Final Poster															
Meetings															
Client															
Advisor	X														
Website															
Update	X														

Filled boxes = projected timeline

X = task was worked on or completed

Detailed accomplishments

Previous week's goals and accomplishments

Nothing here this week, as it was our first week.

Activities

Name	Date	Activity	Time (h)	Week Total (h)	Sem. Total (h)
Pierson Trapskin	9/9	Notebook update and progress report 1.	2	2	2