

• HEALTH •  
**INNOVATION**  
 Summer Research Project  
 Suraj Anand & Drew Clausen

Week	Dates	Objectives
1	May 24 – May 30	<ul style="list-style-type: none"> <li>• Setup Python environment               <ul style="list-style-type: none"> <li>◦ <a href="#">Pillow</a> – Python image library</li> <li>◦ <a href="#">pytesseract</a> – OCR library</li> </ul> </li> <li>• Run the test case</li> <li>• Scrape the web for test images</li> </ul>
2	May 31 – June 6	<ul style="list-style-type: none"> <li>• Evaluate performance               <ul style="list-style-type: none"> <li>◦ Tool didn't recognize any text – Score 0</li> <li>◦ Tool recognized some text – Score 1</li> <li>◦ Tool recognized all text – Score 2</li> </ul> </li> <li>• Preprocess images and re-evaluate               <ul style="list-style-type: none"> <li>◦ Rescale images</li> <li>◦ Increase contrast</li> <li>◦ Binarize images</li> <li>◦ Transform images</li> </ul> </li> </ul>
3	June 7 – June 13	<ul style="list-style-type: none"> <li>• Research and evaluate other text recognition tools</li> <li>• Test facial recognition tools</li> </ul>
4	June 14 – June 20	<ul style="list-style-type: none"> <li>• Wrap up de-identification work</li> <li>• Begin clinical image project               <ul style="list-style-type: none"> <li>◦ Setup TensorFlow</li> <li>◦ <a href="#">Download Lung Images</a></li> </ul> </li> <li>• <a href="#">Visit Innovation Studio Saturday, June 16</a></li> </ul>
5	June 21 – June 27	<ul style="list-style-type: none"> <li>• Build CNN to count nodules</li> <li>• Experiment with transfer learning from pretrained nets</li> <li>• Drew out-of-town June 23 – July 1</li> </ul>
6	June 28 – July 4	<ul style="list-style-type: none"> <li>• Drew out-of-town June 23 – July 1</li> <li>• Continue model build/train</li> </ul>
7	July 5 – July 11	<ul style="list-style-type: none"> <li>• Continue lung nodule identification</li> </ul>
8	July 12 – July 18	<ul style="list-style-type: none"> <li>• Finalize lung nodule model</li> </ul>
9	July 19 – July 25	<ul style="list-style-type: none"> <li>• Write up lung nodule model</li> <li>• <a href="#">Visit Health Innovation Studio Saturday, July 21</a></li> </ul>
10	July 26 – Aug 1	<ul style="list-style-type: none"> <li>• Flex week</li> </ul>
11	Aug 2 – Aug 8	<ul style="list-style-type: none"> <li>• <a href="#">Visit Innovation Studio during the week to meet the team and present your work!</a></li> </ul>