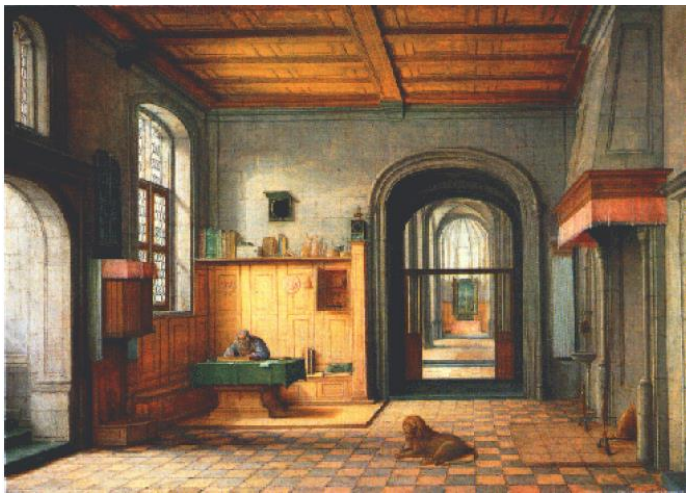
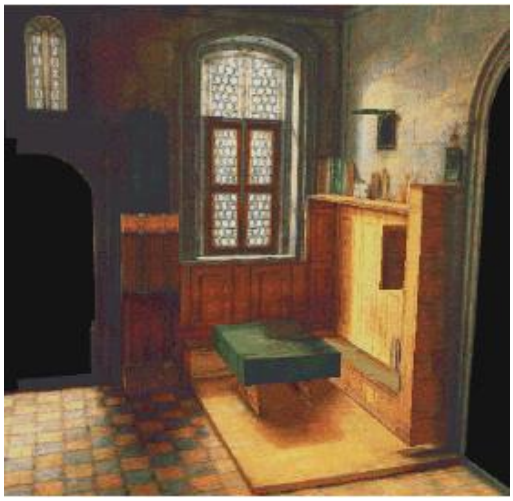
In 1999, Antonio Criminisi submitted his PhD dissertation to Oxford and promptly won the British Computer Society Best Dissertation Prize. An article summarizing his work can be found here. This work appeared in the middle of the development of analysis of the PnP problem, which continues today. Criminisi sought to apply computer vision techniques to the judgement of classical artistic attempts to depict 3-dimensional space on a 2-dimensional canvas. The analysis described by Criminisi can today be accomplished easily using OpenCV's SolvePnP() method.

The image on the left is of a 17th century painting by Steenwick. The image on the right was generated by a computer program taking Steenwick's painting as input.





In this project, you will do something similar starting with a famous painting by Vermeer called The Music Lesson. Your output will be the view of the room straight down from the ceiling center.

In order to accomplish this, you will need to provide both 2d and 3d coordinates as you can to SolvePnP. This video, https://www.youtube.com/watch?v=GFfmc4e7KgM,--interesting on its own terms—includes a number of measurements that can help you.