Computer Vision Challenge
Tour into the Picture

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1 WORKFLOW

Start
App Initialization

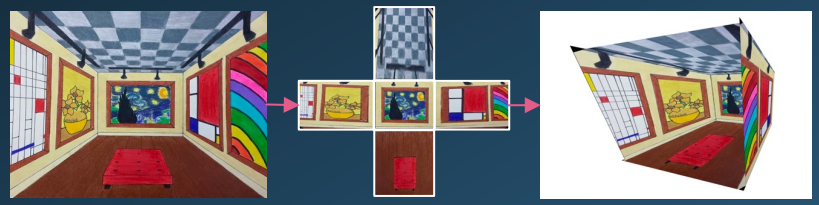
User Inputs
- Vanishing Point
- Inner Rectangle
- Foreground Object

Processing
- Background Model
- Foreground Model
- Texture Mapping

Result
Animation

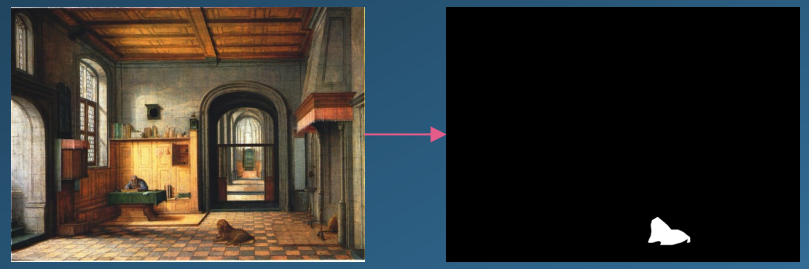
BACKGROUND MODEL

- Box with 5 surfaces [1]
- Geometry of vanishing point and vertices
- Inverse perspective projection



FOREGROUND MODEL

- A simple surface defined by a polygon [1]
- α-value from foreground mask
- $C = (1 - \alpha)C_B + \alpha C_F$



2 ANIMATION

- Game-like movement within the scene using the mouse and WASD keys, where the cursor direction determines the movement plane

3 RESULTS

4 CHALLENGES

- 3D model for foreground objects
- Scenes without clearly identifiable vanishing point
- Implementation of the mouse movement
- UI-Challenge: To give user explicit hints on workflow without too much text

5 REFERENCE

[1] Horry, Youichi, Ken-Ichi Anjyo, and Kiyoshi Arai. "Tour into the picture: using a spidery mesh interface to make animation from a single image." Proceedings of the 24th annual conference on Computer graphics and interactive techniques. 1997.