FINAL PROJECT REPORT

Venetian Aperitivo

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SUMMER 2026
CS148

1 The Idea

Our idea was to represent one of the most distinctive traditions of our home country, Italy: the Venice Carnival, renowned for its elaborate handcrafted masks. We paired this tradition with Venetian *cicchetti*, a varied selection of small local appetizers typically enjoyed with a drink as part of an aperitivo. Venice was an especially fitting setting for our project: water is the city's defining element, and, together with the crystal glasses in the foreground, it allowed us to make the most of ray tracing through rich reflections and refractions.

The Project

Our project depicts an Italian aperitivo overlooking Ponte di Rialto at night. In the foreground, a small table holds typical Venetian appetizers in crystal containers, cocktails in crystal glasses, and a Venetian Carnival mask. In the background, Ponte di Rialto rises above Canal Grande, surrounded by colorful reflections and nighttime illumination.

2 Reference Images

(a) Rialto Bridge **(b)** Aperitivo **(c)** Carnival masks

Figure 1: Reference images for the project.

3 Project Requirements

3.1 Leveraging the Power of Ray Tracing

The composition relies strongly on physically based light effects, with reflections, refractions, and specular highlights shaping much of the final image. The canal reflects the illuminated Rialto Bridge, nearby buildings, and warm street lights, helping define the nighttime atmosphere. In the foreground, the crystal glasses and serving bowls depend on transmission, refraction, and internal reflections, while the metallic tray, cutlery, and Venetian mask capture sharp highlights from the surrounding lights. The gold details of the tablecloth and the glossy table objects further add many small reflective accents across the scene. Finally extensive use of emissive materials for lights in the background has been done.

These effects would be reproduced poorly in scanline rendering, since much of the scene's visual richness comes from interactions between light and reflective or transparent surfaces. In particular, the canal, crystal objects, metallic decorations, and warm indirect lighting all rely on ray-traced effects.

3.2 Main Geometry from Scratch

Most of the key geometry in the scene was modeled from scratch. The Venetian mask, which acts as the main focal point, all of the crystalware, the Venetian *cicchetti* (appetizers), and the Rialto Bridge in the background were created specifically for the project. We also modeled smaller details such as peanuts and olives.

3.3 UV Mapping and Texturing From Scratch

Most of the materials in the scene were created and tuned specifically for the project. This includes the crystalware, tablecloth, peanuts, olives, gondola, and several other foreground elements. Custom UV maps were created for the menu, bruschetta bread, and coasters, allowing their textures and material details to follow the geometry correctly.

3.4 Simulation and Advanced Features

Several advanced features were used to support the final composition. Depth of field was applied with the focal plane placed on the Venetian mask, keeping it as the main point of attention while gradually softening the background. Cloth simulation was used for the tablecloth, table lamp and napkins. Physics simulation was also used to place the food inside the crystal bowls and containers, so that the individual pieces could fall and arrange themselves in a more realistic way (i.e., olives, peanuts, pretzels).

3.5 Variants

Figure 2: Variant a.

Figure 3: Variant b.

4 Contributions

Asset	Model	Texture	Notes
Venetian mask	**Made from scratch** Author: Silvia	**Remixed** Author: Silvia	
Crystal glass	**Made from scratch** Author: Silvia	**Made from scratch** Author: Silvia	
Crystal cup	**Made from scratch** Author: Silvia	**Made from scratch** Author: Silvia	Glasses, cups, and serving containers.
Crystal containers	**Made from scratch** Author: Silvia	**Made from scratch** Author: Silvia	
Coaster	**Made from scratch** Author: Andrea	**Made from scratch** Author: Andrea	UV unwrapped circle to match texture.
Silver plate	**Made from scratch** Author: Andrea	**Made from scratch** Author: Andrea	Foreground serving plate.
Tomatoes	**Made from scratch** Author: Silvia	**Made from scratch** Author: Silvia	Part of the cicchetti dressings.
Caviar	**Made from scratch** Author: Silvia	**Remixed** Author: Silvia	Part of the cicchetti dressings.
Octopus	**Remixed** Author: Silvia	**Made from scratch** Author:	Part of the cicchetti dressings.
Creamed Cod	**Made from scratch** Author: Silvia	**Made from scratch** Author: Silvia	Part of the cicchetti dressings.
Figs	**Downloaded** Author:	**Downloaded** Author:	Part of the cicchetti dressings.
Mushrooms	**Downloaded** Author:	**Downloaded** Author:	Part of the cicchetti dressings.
Peanuts	**Made from scratch** Author: Andrea	**Made from scratch** Author: Andrea	Positioned using physics simulation.
Olives	**Made from scratch** Author: Andrea	**Made from scratch** Author: Silvia	Positioned using physics simulation.
Table lamp structure	**Made from scratch** Author: Silvia	**Remixed** Author: Silvia	Cloth simulation used for the top.
Table lamp crystals	**Remixed** Author: Silvia	**Remixed** Author: Silvia	
Rialto Bridge	**Made from scratch** Author: Andrea	**Made from scratch** Author: Andrea	
Tablecloth	**Made from scratch** Author: Andrea	**Remixed** Author: Andrea	Cloth simulation and custom material.
Water	**Made from scratch** Author: Andrea	**Made from scratch** Author: Andrea	Procedural reflective material.
Pillar	**Made from scratch** Author: Andrea	**Remixed** Author: Andrea	Architectural foreground element.
Napkin	**Made from scratch** Author: Andrea	**Downloaded** Author:	Foreground cloth element.

Asset	Model	Texture	Notes
Bread	**Made from scratch** Author: Andrea	**Made from scratch** Author: Andrea	Custom UV map for the bruschetta bread.
Gondola	**Remixed** Author: Andrea	**Made from scratch** Author: Andrea	Existing geometry adapted.
Menu	**Remixed** Author: Andrea	**Made from scratch** Author: Andrea	Existing geometry adapted; custom UV map.
Pretzels	**Downloaded** Author:	**Downloaded** Author:	Physics simulation for positioning.
Cutlery	**Downloaded** Author:	**Downloaded** Author:	
Canal buildings	**Downloaded** Author:	**Downloaded** Author:	
Street lamp	**Downloaded** Author:	**Downloaded** Author:	
Candle	**Downloaded** Author:	**Downloaded** Author:	

5 Composition

Composition played an important role in maintaining a clear visual hierarchy despite the large number of objects in the scene. The placement of the main elements was guided by both the *rule of thirds* and the *Golden Triangle B*. The table forms the principal foreground subject, while Ponte di Rialto remains clearly visible and recognizable in the background. The main objects were positioned around the intersections of the rule-of-thirds and along the diagonals defined of the Golden Triangle B.

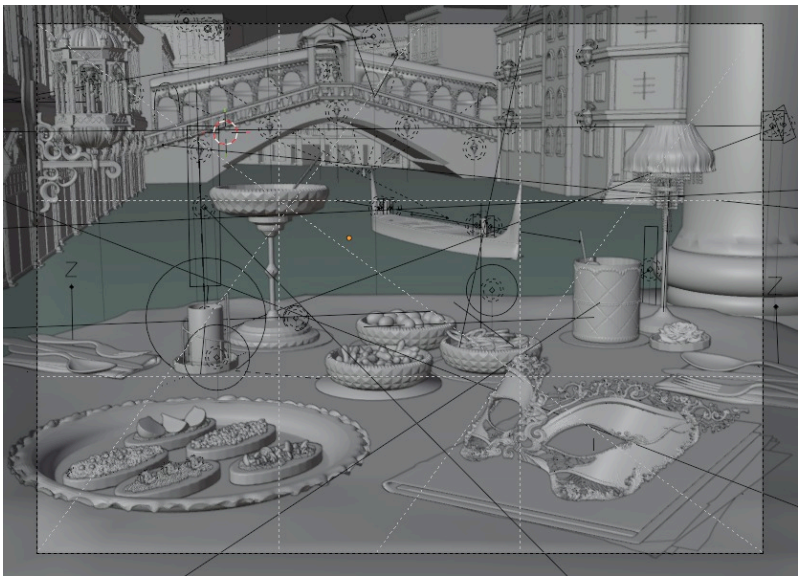

Figure 4: Final camera composition.

5.1 Grayscale Analysis

Evaluating the render without color made it possible to study the distribution of luminance and contrast independently from the chosen palette.

(a) Original color render. **(b)** Grayscale render.

Figure 5: Comparison of color and luminance composition.

5.2 Color Palette

The color palette is dominated by deep, warm nighttime tones: near-black shadows and dark burgundy establish the scene, while antique gold and copper describe the illuminated architecture, food, and metallic details. Crystal ivory captures the reflections in the glassware and lights, the pillar and parts of the venetian mask.

Night Black	Deep Burgundy	Antique Gold	Warm Copper	Crystal Ivory
#160801	#572A09	#965E25	#CB9A6C	#F7E8D9

6 References

Rialto Bridge Modeling Tutorial
Watch video on YouTube

Silver Texture Tutorial
Watch video on YouTube

Water Texture Tutorial
Watch video on YouTube

Water Material Tutorial
Watch video on YouTube

How to model a mask in Blender
Watch video on YouTube

Add decorationsn to mask
Watch video on YouTube

Add decorations to mask
Watch video on YouTube

Sculpting brushes
Watch video on YouTube

Crystal glasses
Watch video on YouTube