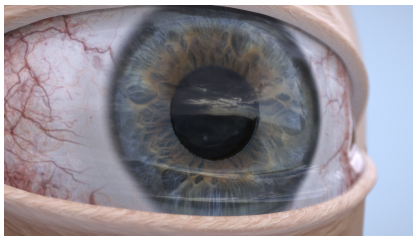


Procedural Eye Meniscus (Personal Project)
Shot 01 | 0:01 - 0:05 | Software: Houdini, Davinci Resolve

- Developed a procedural, physically-based eye layering system (cornea, tear film, eyelid) using raycasting to snap contact points with art-directable parameter controls.
- Authored custom VEX/HScript tools to drive deformation, layering, and interaction behavior.

Roles: CFX, Lighting, Lookdev, Color

Frozen Margarita (Master's Project)
Shot 02 | 0:05 - 0:09 | Software: Houdini, Fusion, Davinci Resolve

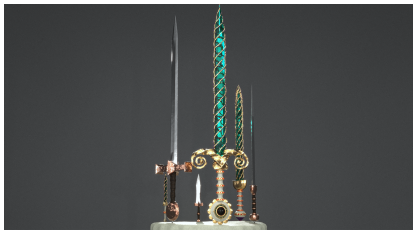
- Simulated lime cell growth using Vellum and removed internal geometry to create water-filled capsules with increased transmission while preserving the outer skin layer.
- Generated slushy ice and frozen condensation using 3D noise-driven displacement.
- Built procedural lime textures by deriving heightfields from lime geometry.

Roles: Modeling, Lighting, Lookdev, Compositing, Color

Stick It to the Man (Master's Project)
Shot 03 - 05 | 0:09 - 0:23 | Software: Houdini, Davinci Resolve

- Procedurally modeled & rigged the character to support rapid design iterations.
- Simulated the keychain tail using Vellum hair and point deform to drive secondary motion.
- Manually animated camera movement, f-stop, and focus distance for cinematic look.

Roles: Character Modeling, Rigging, Layout, Motion Editing, CFX, Camera Animation, Color



Roman Swords (Master's Project)
Shot 06 | 0:23 - 0:27 | Software: Houdini, Davinci Resolve

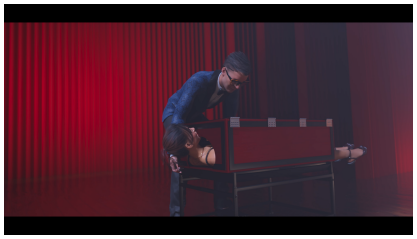
- Developed a procedural modeling system driven by parameter controls in an HDA interface.
- Implemented character-based adaptive scaling of sword's size for relative scale accuracy.
- Designed user-facing toggles, menus, sliders, and buttons to generate a wide range of sword designs from a single cohesive system.

Roles: Procedural Modeling HDA Tool Development, Lighting, Lookdev, Color

Curtains (Master's Project)
Shot 07 - 09 | 0:27 - 0:35 | Software: Houdini, Davinci Resolve

- Built a procedural modeling system to generate the curtain fabric source geometry.
- Devloped an animateable grid-based anchor pin system that drives the Vellum simulation.
- Created visualizer geometry to preview, adjust, and finalize animated pin positions.

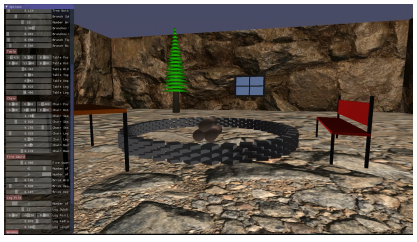
Roles: Procedural Modeling & FX HDA Tool Development, Modeling, Layout, FX, Lighting, Lookdev, Color



Amazing Adam | Magic Box (Master's Project)
Shot 10 - 11 | 0:35 - 0:45 | Software: Houdini

- Built a procedural modeling system that generates all box components in correct spatial relationships, with fully parameterized user controls.
- Mathematically rigged the box hinge system using trigonometric relationships to enforce hierarchical, relative rotational behavior.

Roles: Procedural Modeling & Rigging HDA Tool Development, Virtual Camera Operation



Campfire | Parametric Modeling System (Bachelor's Project)
Shot 12 - 15 | 0:45 - 0:56 | Programming: C++, OpenGL, GLSL

- Geometry Processing - Created primitive geometric shapes from scratch; sphere, cube, cylinder, torus and a parametric modeling system driven by user input, runing in realtime
- Shader Development | Implemented Blinn-Phong, Oren-Nayer and Cook-Torrance shader code using GLSL