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Breakdown sheet

Gundam F-91



Responsibilities: everything.

Description:

- Integrated CG Gundam into live-action plate to create a war-zone type of shot in moody sunset.
- Shot background plate (trees) with a consumer camcorder.
- Acquired HDR lighting on-set with Canon DSLR, Sigma 8mm fisheye, Promote Control, and Nodal Ninja pano head.
- Assembled and stitched exposure brackets as HDR environment map in PTGui.
- Modeled the Gundam in Maya and laid out UVs.

- Sculpted details (bullet holes, deep scratches, and random indentations) in Mudbox and extracted normal and displacement maps.
- Textured in Mari with some visits to Photoshop.
- Calibrated HDR-based lighting with reference gray ball image shot on-set with principal photography camera.
- Created multi-layered metal shaders for finer control of dirt, grime, and scratches in textures.
- Look-dev and lit the shot in VRay.
- Rendered multi-channel EXRs with numerous mattes for fine-tuning in composite.
- Composited CGI, stock elements, and plate in Nuke.
- Kept Imaging pipeline consistent in linear color space with 16-bit half-float EXR as much as possible to preserve the lighting and color information all the way to the final video compression and web publishing.

Software: Maya, VRay, Nuke, Mari, Mudbox, Photoshop, PTGui.

Audi R8



Responsibilities: lighting, shading, rendering, and compositing.

Description:

- Integrated CG car into live-action plate to create a photorealistic shot.

- Approached the integration without a properly-calibrated HDR env. map; sculpted the lighting with various lighting and utility passes in the comp.
- Acquired HDR lighting on-set with Canon DSLR, Sigma 8mm fisheye, Promote Control, and Nodal Ninja pano head
- Assembled and stitched exposure brackets as HDR environment map in PTGui.
- Shaded and lit the car in Maya with mental ray with custom multi-layered car-paint shader.
- Rendered various mattes of different car parts for finer control and color correction in Nuke.

Software: Maya, mental ray, Nuke, Photoshop, After Effects, PTGui.

R&D: spatially-aware IBL setup and relighting with light-stage style data set



Responsibilities: R&D, custom Python scripts, lighting, rendering.

Description:

- Researched on a workflow to address the issue of static lighting when using a single environment map for IBL while a shot features dynamic lighting condition such as a CG character travels through an winding corridor.
- Reconstructed set environment as low-poly mockup geometries based on photogrammetry.

- Acquired HDR environment map at multiple key positions on-set.
- Textured mock-up geometries by projecting HDR maps in Nuke from the positions of the CG character.
- Set up a Nuke script with animated cubic-cam rig to re-photograph animated HDR environment maps from the POV of the CG character.
- Created a CG light stage in Maya and rendered a set of light-stage basis images of the CG head with VRay.
- Calibrated basis images based on the concept described in the paper A Lighting Reproduction Approach to Live-Action Compositing (Debevec et al., 2002).
- Created python scripts to calculate weighted average of basis images to interactively approximate the lighting result the re-photographed environment map provides.
- Intended to block out the lighting of a shot efficiently and directly in Nuke with HDR light cookies and lighting information acquired on-set.

Software: Maya, VRay, Nuke, PTGui, HDR Shop.