

Tom Ferstl
RiggingReel'08

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shotlist & curriculum vitae

THE ANATOMICAL RIG

shot description

The anatomical rig is the result of my diploma thesis: "optimization and reduction of the human skeletal system for 3D-Animation" at the University of Applied Sciences in Salzburg/Austria.

my contribution

Rigging

Modification of the skeleton to fit to the body

research

The research was to find out if a rig, which is completely based on human skeletal anatomy can produce better deformation and also animation results than normal standard rigs do. So the rig was built to be as anatomically correct as possible on one hand, while maintaining easy-to-use and intuitive manipulation controls on the other hand.

results

The resulting deformation of the rig reaches a high level without using any extra deformation techniques like corrective-blend-shapes. The anatomical limits on almost any joint keeps the rig in anatomical space and leads to some really natural looking motions. As a "side-effect" of the limits on the joints, but not on the control-objects, the motion is distributed to the next bodypart when the previous one reached its limit, which looks very pleasing.

So being as anatomically correct in placement and behavior of the joints leads to very good deformations. Building anatomical dependencies between bodyparts and limiting all joints results in very natural motions, while always being in a correct anatomical space.

main rig features

- as anatomically correct as possible and reasonable (with maya's standard feature set)
- anatomical correct placement and behavior of all bodyparts
- anatomical dependencies throughout the spine, shoulder and hip
- anatomical limits on all joints
- fk-based spine-setup with additional ik-spline like controls (because with a spline-ik, joints can not be controlled exactly)
- anatomically correct chest rig with breathe control
- fully automated clavicle and scapula
- stable shoulderjoint self-rotation elimination in all possible poses
- stable wrist-setup
- automatic pole-vectors for arms and legs, so they are in the expected positions most of the time
- anatomically correct foot-setup with reverse-foot like controls
- anatomically correct jaw setup
- fully joint-based, no use of extra deformation techniques
- fully node-based, no expressions

ACO

shot description

ACO is a robot that helps two crazy scientists during the short movie "Ratattack". The sequence shows ACO's attempt to take off the first time after being repaired.

screencapture demonstrating the rig.

my contribution

Rigging
Dynamics
Tracking
2.5D

main focus

Creating a stable, controllable and intuitive high and lowpoly rig.

The rig is either controlled via control-curves or via a script-node UI for selecting the controllers (also shift-click selections), switching between high, and lowpoly cable display (for realtime dynamics interaction when animating) and a panic button, which sets everything back to zero except the COG.

the rig was finished utilizing 3 scripts

joint_to_pivot.mel (Ferstl Tom)

Snapping joint pivots to the pivot of the selection

LRA_snap.mel (Ferstl Tom)

Orients the Local Rotation Axis of a joint to meet the orientation of the selection.

cgTkDynChain.mel (CG ToolKit)

A macro script for creating a dynamic-curve-driven spline-IK on selected bones and placing a controller-object to the tip of the chain with the most important dynamic attributes from the Hair-System (used for the dynamic wires).

The main reason why I've chosen to rig the wires with bones is, that one has the possibility to bake the final animation to the bones and delete all the dynamics in the scene, so there is no need for dynamic cache files and stuff, resulting in less trouble when rendering on multiple machines.

I also worked hand in hand with the modeler of ACO (Simon Ohler) to ensure that all hinges and pistons were placed correctly to make the rig actually work.

BIONICMAN

shot description

The Bionicman presents the new ATOMIC-ski and was realised for ATOMIC at FreshFX Media.

The screencapture shows the skinning and the dynamic setup of the flying parts.

my contribution

Rigging
Dynamics

main focus

Creating an easy-to-use and fully automated but controllable setup to make the various bodyparts flying off and following the body in a dynamic and fluent way.

The skinning of the various bodyparts is organic on one hand and hard/technical on the other. So the look resembles hard plates while still working as an organic model.

the concept

The concept determined that Bionicman's bodyparts should fly off when the centrifugal force is big enough (i.e. when he is driving a tight curve) and follow him in a fluent manner to later reattach when the force fades.

the dynamics setup

The basic idea was to make dynamic hair-curves to serve as a motion-path for the bodyparts, which ensures that they follow the skier. The hair curves have some length flex so they expand on force. Now the curve's length is measured and if its getting longer it drives the bodyparts outwards on the motionpath. Offsets, thresholds, scales and other attributes deliver perfect control of the fully automated setup. Also the visibility of the dynamic flying parts and the smooth skinned parts is automatically switched via a adjustable threshold attribute.

Because the model features nearly two-hundred parts the whole setup process was entirely scripted to get the job done in time. The setup is fully node-based and there are no expressions used to deliver a superb performance while animating.

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citizenship Austria
family status unmarried

a personal statement

Due to my problem-oriented skills and high technical understanding I would love to accept the challenge developing stable and easy-to-use solutions in a high level production environment.

work experience

2008

Visiting lecturer for Rigging in Maya @ FH Salzburg, Salzburg, AT
Freelancer @ FreshFX Media, Salzburg, AT
Freelancer @ Bongfish, Graz, AT

2007

Freelancer @ FreshFX Media, Salzburg, AT
Freelancer @ Sony DVD Center Europe, Salzburg, AT

2006

Junior Rendering Artist @ CA Scanline, Munich, DE
for "Lissi und der wilde Kaiser"

2005

Freelancer @ Sony DVD Center Europe, Salzburg, AT
Freelancer @ Medisan, St. Johann, AT

2004

Internship @ Rabcat, Vienna, AT

education

2003 - 2007

Master of Arts with first-class honors
University of Applied Sciences (mma - major 3D Animation)
FH-Salzburg - Austria

Maya-Tutor of the 3D Animation department
Students representative of the 3D Animation department
Labmanager of the 3D Animation department

2002 - 2003

Technical University of Vienna, Austria (media IT)

1996 - 2001

A-levels with honors,
HTL-Saalfelden, Austria
Secondary College for Electrical Engineering and Microelectronics.

3D Related Software Skills

excellent

Autodesk Maya

Adobe After Effects

2d3 Boujou

Autodesk Motionbuilder

Adobe Photoshop

advanced

Maya Mel & Expressions

Pixologic ZBrush

Eyeon Digital Fusion

Maxon Bodypaint3D

basic

Maxon Cinema4d

C++

Final Cut Pro

Programming

Maya Mel & Expressions

basic C++

Other Software

Adobe Premiere

Virttools Dev

Steinberg Wavelab

Native Instruments Reaktor

Adobe Illustrator

Steinberg Cubase

Magix Samplitude

Personal Skills

pro

problem-oriented

team-player

flexible

fast learning

enthusiastic

patient

contra

perfectionist

Leisure Interests

scuba-diving

cinema

testing and playing around with new 3D-related software

3D Tutorials

music

Rigger
Scripter
Generalist

Tom Ferstl

strong problem-solver
strong maya-knowledge



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