

## CREDIT LIST – RIGGING REEL 2007

Igor Stefanovic  
Prva Pruga 17  
11080 Belgrade  
Serbia  
Europe

Phone  
+44 7876 272 770 UK  
+381 63 433 059 Serbia  
E-mail  
igor.animation@yahoo.com  
www.igorstefanovic.com

Demo reel demonstrates mainly my abilities in creature development – creating mechanisms and systems for realistic skin deformations, as well as artistic skills that are reflected in anatomically correct poses and facial expressions of characters. Other aspects of creature development are also shown – object and particle dynamics, cloth dynamics, fur dynamics. In some scenes are also demonstrated my lighting and shading skills, as well as compositing and generation of overall feel and mood of character or scene.

**1. Character setup** This scene shows realistic human character animated through various stretching and exercise poses, for testing shape and motion of character's body. Shaders and lighting, as well as animation, are simple. The emphasis of animation is on torso, shoulders and arms, and large number of possible poses in which spine, chest, collar, shoulder and elbow could be is covered, including more challenging extreme poses.

Skin itself is binded to muscles, and muscles are deformed by joints. Skeleton bones are modeled and each muscle is stretched between specific bones as in a real body. There are 54 muscles in torso, neck and arms; 27 on each side. Weighting process is fully automated by scripts. Hips and legs are deformed directly by joints, without muscles but with added corrective blend shapes, since lower body is used only as collision object for cloth.

Due to the complexity, setup was developed as modular project, with each muscle as module that is as independent from other modules/muscles as possible, and one connecting module that binds skin to all the muscles.

First part of animation shows front view of upper body, and second part shows combined front view of entire body and back view of upper body.

Production time – approximately 6 months: modeling of skeleton, muscles, skin and shoes – 10 weeks; writing MEL scripts and graphic interface for control of setup and animation – 2 weeks; keyframe animation and cloth testing – 2 weeks; creating joint hierarchies, binding geometry and correcting shape of body in various poses – 8 weeks; final corrections and rendering time – 2 weeks approximately.

**2. Face setup** Facial expressions setup is demonstrated on an old man cartoony character, which was created as a part of short animated movie (unfinished – after development of this character I turned completely to creature development). Character has skull and muscles under skin. Skull visually helps to improve deformation of muscles. Muscles themselves are deformed by joints (around 80 joints for this face). Joints have a mechanism that places them in the specific position depending on the intensity of various face expressions. This mechanism allows easy corrections throughout production. Skin itself is binded to muscles, and required no or very little additional weighting since muscles are evenly positioned under the skin.

Mechanism for muscle deformation was later improved and used in body setup for human character (previous scene), and it's functioning is demonstrated in scene regarding the technical aspects (scene 6 in demo reel).

First part of animation shows final face in a sample animation. Second part shows skull and muscles that drive the deformation, in the same sample animation. Third part shows combined view of muscles and face going through individual contractions of most important muscles in the face.

Production time – approximately 2 months: character design and modeling of skull, muscles and skin – 4 weeks; development of setup and animation – 4 weeks approximately.

### **3. Various works**

These include various scenes and characters:

- a) River bank scene was part of the same short movie project as previous character. River itself is soft body object with applied dynamic fields and animated textures. Grass and trees are created using Maya Paint Effects.
- b) Gorilla is static subdivision surface model without rigging. Fur is created using Maya Fur, and face texture is hand painted.
- c) Lioness, same as gorilla, demonstrates my animal modeling and visualizing skills.
- d) Cocoon (title of picture) is modeled human character, under Maya Cloth object with applied dynamic fields. Texture is part procedural, part hand painted.
- e) Monk – the model itself is imported – not my modeling. The work demonstrates use of Maya Cloth, Maya Paint Effects for grass and particle dynamics for clouds.
- f) Wasteland – nurbs modeling with particle dynamics in the background.
- g) Dragon demonstrates composition of CG character and live photographed background.

### **4. Drawings**

Demonstration of my drawing abilities, including faces, different parts of body and entire bodies – human and animal (lioness and rhino), in several poses.

### **5. Models**

Turntables of models used in human character setup (scene 1 in demo reel). Human character itself is subdivision surface model with topology that follows real placement of muscles, which enables better and easier binding and more realistic deformation. Hips and legs have lower resolution since they are covered by cloth. Cloth is generated using Maya Cloth. Shoes are also fully modeled. Skin is modeled based on proportions and positions of bones in skeleton, which were modeled first. Detailed modeling of every bone allowed precise positioning of joints and muscles later on.

### **6. Technical aspects**

Demonstration of programming, scripting and creating graphic interface in human character setup project (scene 1 in demo reel). First part shows Maya interface with window for selecting joints in skeleton, which simplifies and speeds up animation process. Second part shows the use of mechanism for editing shapes of muscles (which are deformed by joints – separate hierarchy for each muscle) based on rotation of bones in skeleton.

**Software used:** Autodesk/Alias Maya, Adobe Photoshop, Adobe AfterEffects.

**Computer/OS used:** PC Pentium 4/Microsoft Windows XP.