Additional Information

Paper 1:

- Use of Laplace's diffusion equation to generate weights for attaching mesh vertices to the skeleton using linear blend skinning
- Transfer a biped walk onto a human hand, a cat on its hind legs and a donut.

Paper 2:

Paper's contributions:

1. Unified modeling and rigging process
2. Modified version of Douglas Peucker algorithm for creating a high quality skeleton from the sketched outline of a shape
3. Efficient method of locally recomputing the skin weights to maintain a valid, high-quality rig.

Paper 3:

- Uses skinning method form Pinocchio for filling unknown skinning information
- Uses discretization of the Laplacian operator over the surface of the mesh.

Paper 4:

- Voxelization method can be used for parallelization
- Weights can be modified interactively, at pose time, without requiring additional processing or computation.
- Automatic skeleton creation could be done (using Pinocchio) instead of manual skeleton creation for the downloaded meshes but this was out of scope of the research.

Paper 5:

- Refers to Pinocchio for auto rigging. Pinocchio drawbacks are that it requires water tight mesh. However, this method produces a rig as superior as Pinocchio
- Refers to Geodesic voxelization for use for general models
- Work is similar to Frankenrigs which uses parts to assemble the full rig. However, this method relies on a single template rather that a set of rigs to be matched from a database.
- Use of ML techniques such as PCA to reduce the dimensionality space
- Uses ICP to match template to the 3D model
- Uses skeleton extraction based on Pinocchio to generate the initial body pose