Autoscoper v2.7 - Tracking Dialog

Bardiya Akhbari

Initial Guess Using…	Current frame	It uses the position of the "bone" in the <u>current</u> frame as the initial position.
	Previous frame	It uses the position of the "bone" in the <u>previous</u> frame as the initial position.
	Linear extrapolation	It estimates the initial position using a <u>linear extrapolation of the previous two</u> frames.
	Spine interpolation	It estimates the initial position using a <u>spline interpolation of all frames</u>. [This is the curve that you see in the Timeline Window (bottom)]
Optimization Method	Particle Swarm Optimization (PSO)	Global Minimization Algorithm. This method takes longer time, but the initialization does not matter as much as it matters for other methods.
	Downhill Simplex (DS)	Fast Local Minimization Algorithm. Initialization is really important in this method.
	# of Refinements	Number of times the optimization algorithm looks for the best match. This does not matter for PSO; however, it improves the Downhill Simplex (rule of thumb is 10 for DS).
PSO Algorithm Parameters	Min limit	This assigns a minimum neighborhood that PSO looks for the best match. Default is -3, which means PSO looks for the best match in the neighborhood of 3 mm and 3 degree of the initial position.
	Max limit	This assigns a maximum neighborhood that PSO looks for the best match. Default is +3, which means PSO looks for the best match in the neighborhood of 3 mm and 3 degree of the initial position.
	Max Epochs	How many epochs you want the optimization to run before stops. You never reach the default value.
	Max Stall	Stopping criteria for PSO. If the best match does not change after #MaxStall epochs, PSO considers that as a global minimum (best match).
Cost Function	Bone Models (Normalized Cross-Correlation)	NCC. A normalized cost function to detect the best match. Closer to 0, better the match. However, this completely depends on the image filters and qualities.
	Using Euclidean Distance [Disabled]	This will be added in future versions.