

# Development of a Novel Production Pipeline for use in the Creation of a 3D Animated Short Film

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## Abstract

Throughout the duration of this project, the goal of creating a short film drove all technological development. The art inspired the technology.

In order to do this, it was necessary to build a pipeline that would allow the creation of professional quality animation. Early on, it was decided to make use of Non-Commercial Renderman Studio for Maya (RMS). This software was just released in May of 2015 for the first time along with the RIS rendering mode. The first feature utilizing this rendering mode is Finding Dory, which will be released in June 2016, six months after the completion of our short film.

RIS utilizes stochastic integrators, a geometric area light system and supports an incremental sampling architecture for rapid interactive results. None of these features have ever been utilized in the production scene at Brown University previously and required both technical support and conceptual shifts in the artistic thought process.

Other programs utilized were Autodesk's Maya, SideFX's Houdini and The Foundry's Nuke. Geometry data was passed using ILM's Alembic format and images were rendered to 32-bit OpenEXR files for the multichannel support.

This short film attempted to express the feeling of home that is present in the residential areas of Providence and hopefully resonate specifically with the students of Brown University. The color palette was inspired by the pastel colors of the houses and models aimed to have a slightly 'melty' and handmade look. The decision was made that if an object was made of two pieces of wood, two pieces of wood would be modeled. It was important for the home to feel lived in, but not like a tenement, so the level of detail was closer to a theater set than an actual home. There was also experimentation with the look of miniatures and low cameras to get a more intimate feel.



Figure 1: A test render of the main character's sweater, skin and hat BXDFs.