

Object Model For X3D (OM4X3D) and X3D Java Scene Access Interface (SAI) Library, X3DJSAIL

Masters Class for Web3D 2017 Conference

Presenters

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Summary. Description and usage of the Object Model for X3D (OM4X3D) and Scene Access Interface (SAI), including design, development, and application of the X3D Java SAI Library (X3DJSAIL) as well as XML, JSON and (draft) C++ implementations.

Topics

- X3D Graphics has strongly typed Interface Hierarchy, now comprehensive Object Model.
- SAI design provides consistent bindings across multiple programming languages, matching expressive power of X3D file encodings and providing language independence.
- Autogeneration of open-source tools and SAI libraries using Object Model for X3D (OM4X3D). “Future proofing” to immediately track expected changes in X3D version 4.
- Design, development, creating and validating robust applications with X3D Java Scene Access Interface Library (X3DJSAIL).
- Matching design and usage of JSON encoding for X3D, X3DJSONLD within node.js programming environment.
- Building example X3D programs for client-side and server-side applications.
- Bundling SAI libraries to integrate X3D capabilities in legacy tools and new applications.
- Ongoing and potential work, including X3DCSAIL for C++ and X3DPSAIL for Python.

Learning objectives

- Knowledge and understanding of the role of X3D Scene Access Interface (SAI).
- Improved awareness of X3D tools for independent application development.
- Gain ability to write full-fledged X3D programs in Java and JavaScript.

Additional details

- Intended audience: X3D programmers developing applications or extending legacy tools.
- Prerequisites: some knowledge of X3D or graphics programming
- Level of difficulty: moderate, with exposure to advanced topics.
- Resources: multiple codebases and example applications.