

Open Inventor Toolkit ACADEMIC PROGRAM FAQ

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How can my organization qualify for this program ?

Qualified academic and non-commercial organizations can apply for the Open Inventor Toolkit Academic Program. Through this program, individuals in your organization can be granted Open Inventor Toolkit development and runtime licenses, at no charge, for non-commercial use. Licenses provided under the Open Inventor Toolkit Academic Program allow you to both create and distribute software applications based on Open Inventor Toolkit. However, your application must be distributed free-of-charge for educational or research purposes. Your application must not generate commercial revenue nor be deployed by a corporation for in-house use nor be used in any other commercial manner. Contact your account manager and we will provide you with more information on the details to qualify for this program.

<http://www.openinventor.com/en/contact/sales/>

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What support will my organization get under this program ?

The Open Inventor Toolkit Academic Program is provided free of charge to qualified organizations but does not include direct support. If you need specific support, you have the following options:

- Purchase a maintenance contract directly from Thermo Fisher. Please contact your account manager for more information. <http://www.openinventor.com/en/contact/sales/>
- Use the Open Inventor Toolkit Forum to ask questions. <https://forum.openinventor.com>
- Support is also available through approved collaborative research projects with Thermo Fisher. Contact your account manager to discuss this.

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How can I make an application available to collaborators ?

Building or running an application that uses Open Inventor Toolkit requires an Open Inventor Toolkit license. Depending on the level of availability that you need, there are several options :

- As a temporary solution, your collaborator can request a trial license. <http://www.openinventor.com>
- Your collaborator can also apply to join the Open Inventor Toolkit Academic Program if they are part of an academic / non-commercial organization. As members of the Academic Program they will be able to use their own Open Inventor Toolkit licenses to build and run the application.
- If your collaborator only needs to run a pre-built application, they can purchase Open Inventor Toolkit runtime licenses to run the application. These are significantly cheaper to purchase than the toolkit licenses. Please contact your account manager.
- Your collaborator can also purchase an Open Inventor Toolkit SDK license. This is the only option if your collaborator is a commercial enterprise.

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Can I use Open Inventor Toolkit in an open source project ?

That will depend, of course, on the terms of the project's governing license. But if the license is permissive with respect to commercial software, then probably yes. But any user of the application will need an Open Inventor Toolkit license. See "[How can I make an application available to collaborators](#)".

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What can I do with Open Inventor Toolkit under this program ?

There are many possibilities! Among them, the Open Inventor Toolkit Academic Program allows you to:

- Teach a class with Open Inventor Toolkit
- Use Open Inventor Toolkit in class projects
- Use Open Inventor Toolkit in a non-commercial research project

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What are some applications of Open Inventor Toolkit

Open Inventor Toolkit is a high-performance 3D software development toolkit (SDK) for professional applications in Medical, CAD & Engineering, Oil & Gas and Mining. Open Inventor Toolkit is used daily by thousands of developers, and hundreds of thousands of copies of professional applications are based on Open Inventor Toolkit. Some examples of how our clients are using Open Inventor Toolkit are available [here](#).

Open Inventor Toolkit is designed to help you create amazing applications for visualizing and interacting with scientific and engineering data. Open Inventor Toolkit applications run on workstations, laptops and even from the Cloud displaying on low-end and mobile devices. Open Inventor Toolkit includes a core general purpose 3D graphics library that can be used for almost anything. There are also extensions that are highly optimized for a specific type of data. For example, VolumeViz provides direct volume rendering algorithms and ImageViz provides image processing algorithms. Please see "What are some key features of Open Inventor Toolkit?".

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What's the value of using Open Inventor Toolkit ?

Since Open Inventor Toolkit is available commercially and used by many organizations you get benefits including :

- We continuously develop Open Inventor Toolkit and the toolkit constantly evolves to make use of the best and latest algorithms, techniques and hardware innovations.
- Open Inventor Toolkit is widely used in multiple industries including Engineering, Medical / Life Science, and Oil and Gas. This ensures that we get real-time feedback from the actual users in the various markets Open Inventor Toolkit is used in.
- Open Inventor Toolkit will allow students to be more productive when trying to implement 3D analysis and visualization applications.
- Open Inventor Toolkit also provides valuable experience for students in the market on a widely used development toolkit.
- Thanks to its deep roots in industry, Open Inventor Toolkit can make it easier for your organization to collaborate with external industrial partners
- Open Inventor Toolkit is maintained, tested, optimized, and extensible, allowing you to create custom classes and integrate your own techniques / IP.
- Open Inventor Toolkit is a solid base for technology projects with potential commercialization in the future.

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What is Thermo Fisher Scientific expecting from my organization in exchange for the ability to use Open Inventor Toolkit free of charge ?

Thermo Fisher Scientific is committed to enhancing education and research through 3D data analysis, visualization and image processing. We will provide you with our tools for free if you qualify. We ask (but do not require) two small things:

1. You allow us to publicly state that your organization is participating in the Open Inventor Toolkit Academic Program. We just add your organization's name and logo on the Open Inventor Toolkit Academic Program web page. Let us know if there are any restrictions.
2. When appropriate, you cite Open Inventor Toolkit in any papers, posters and presentations resulting from research that used Open Inventor Toolkit. (Please cite as "Open Inventor Toolkit from Thermo Fisher Scientific: <http://www.openinventor.com>".)

Of course we encourage you to talk to us! Let us know when you use Open Inventor Toolkit for a research project or in a classroom. We are happy to discuss collaborating, providing assistance with the use of Open Inventor Toolkit, helping to expose your work at conferences and trade shows, and so on.

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How does Open Inventor Toolkit relate to visualization applications ?

As an example, Thermo Fisher Scientific also develops and sells the [Avizo and Amira applications](#). These are built on top of Open Inventor Toolkit and utilize the visualization and image analysis provided by the toolkit. These are only two specific examples of what can be built using Open Inventor Toolkit. Prebuilt applications are powerful and convenient for non-programmers, but may not do exactly what you need or may be more complex than what you need. You can use Open Inventor Toolkit to create or enhance 3D visualization in your own application and create exactly the workflow you are looking for. But note that the Amira and Avizo applications allow you to create new modules using Open Inventor Toolkit. See [Can I use Open Inventor Toolkit to extend visualization applications](#).

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Can I use Open Inventor Toolkit to extend visualization applications ?

This can be a powerful way to implement your own visualization and analysis algorithms using Open Inventor Toolkit while also leveraging the many other tools in an easy to use application like Amira or Avizo. As a result even non-programmers on your research team can benefit from Open Inventor Toolkit. The Amira and Avizo applications have specifically designed with this kind of extensibility in mind using the [XPand extension](#). Note that you must be using C++ with Visual Studio 2013 Update 4. Many other applications have an extension or plug-in architecture that you may be able to use. Open Inventor Toolkit uses the industry standard OpenGL API to access graphics hardware (GPU) and can generally be integrated with any other software that uses OpenGL.

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What languages, platforms and compilers does Open Inventor Toolkit support ?

Open Inventor Toolkit can be used from C++, C# or Java. Open Inventor Toolkit is available on Microsoft Windows and Linux. Open Inventor Toolkit requires OpenGL and is compatible with graphics hardware from vendors including NVIDIA, AMD and Intel. For more details, please visit the Open Inventor Toolkit Developer Zone at <http://developer.openinventor.com>.

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What are some key features of Open Inventor Toolkit ?

For an overview of Open Inventor Toolkit, please visit our web site at <http://www.openinventor.com>. For full details, including the online Reference Manual and User Guides, please check out the Open Inventor Toolkit Developer Zone at <http://developer.openinventor.com>. Some key features are listed here:

- Core library
 - Cross-platform, object-oriented rendering for C++, C# and Java.
 - Convenient “scene graph” organization of geometry and properties.
 - Fast performance, tuned for modern GPUs.
 - Efficient use of memory for large data.
 - High quality geometry rendering including:
 - Single pass, order independent transparency
 - Anti-aliasing
 - Shadows
 - Custom (application defined) shaders)
 - Direct interaction with 3D scenes using draggers and manipulators.
 - Support for stereo and virtual reality including head mounted displays.
- VolumeViz for volume data
 - Designed for medical image data, seismic volume data, etc.
 - Interactively render data much larger than available memory.
 - High quality direct volume rendering using GPU accelerated ray-casting.
 - Orthogonal, arbitrary, fence and curved slices.
 - GPU accelerated, interactive iso-surface display.
 - Co-blending and fusion of multiple data sets and multiple modalities.
 - Powerful clipping and masking tools using geometry or volume data.
 - Direct support for industry standard data like DICOM and SEG Y.
- MeshVizXLM for mesh data
 - Designed for FEM, CFD, earth models, reservoir models, etc.

- Interface-based API allows accessing application geometry, topology and data sets “in place”, i.e. without copying or changing data types.
- Structured and unstructured meshes including “faults”.
- Extract mesh “skin”, logical and geometric slices, isosurface and more.
- Dynamically modify visible cells using flexible “cell filter” mechanism.
- ImageViz for image processing
 - Designed for medical, life science and material science applications.
 - Large set of highly optimized image filters for 2D and 3D data including smoothing, de-noising, edge detection, morphology and more.
 - Automatic and semi-automatic segmentation tools.
 - Image analysis, quantification and measurement tools.
- RemoteViz for Cloud visualization
 - Provides highly optimized image transport from server to client including H.264 video encoding, JPEG/PNG encoding, automatic bandwidth management.
 - Application and data stay on the server.
 - 3D rendering and image processing can be a web service.
 - Client can be any web browser that supports HTML5 (no client software install required).
 - Supports keyboard, mouse, touch and gesture input.

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