Alexandria Labs
Application Version 4.0.0 (stable release)

Design Catalog Version 0.0.1 (private beta)

Development Roadmap

15 April 2025

OVERVIEW

Alexandria Laboratory (Alexandria, for short) is dedicated to the research and development of computational design processes. Specifically, Alexandria leverages artificial intelligence and parametric architectural design workflows to design, document, and fabricate interior and exterior architectural products.

GOALS

1. Conduct, compile, and publish research and documentation related to parametric/computational architectural design processes
2. Create a publicly accessible library of cataloged drawings designed by Alexandria, which serve as a (graphic, written, and physical) standard for production-ready products
3. Conduct research and develop working practices which include incorporate existing and new AI/LLM models to optimize pattern generation, create and deploy code, and conceptualize ideas with apps like ChatGPT, Claude, and Midjourney
4. Fabricate commercially-viable product samples using a variety of methods including laser-cutting, CNC-milling, and 3D-printing and materials such as aluminum, steel, ACM, and acrylic
5. Publish and maintain a publicly available application for Grasshopper workflows, designed and built by Alexandria Labs

SPECIFICATIONS

Alexandria Labs's flagship product and primary focus is Alexandria Grasshopper Plugin, a tool built for Rhinoceros 3D modeling application. The Plugin consists of a collection of user-facing components, a web-based knowledge center, and a companion document, which showcases some of the endless design possibilities Alexandria offers.

Beyond the Plugin, Alexandria's theoretical work will include research, essays, articles, and documentation to be made publicly available through the project website. The scope of research

will include parametric/computational design, the role of artificial intelligence in the design process, and the broader applications of both in architectural design-build environments.

PROJECT OUTLINE

Alexandria Grasshopper Plugin (Public Application)

Alexandria's Grasshopper Plugin simplifies complex parametric design workflows while preserving customizability and user input, designed for quickly onboarding novice designers and for assisting experienced users with their existing workflows.

Design Catalog and Companion Document (Print Media, Samples)

The Companion Document is a compilation of designs built using Alexandria which are fabricatable and commercially-viable. Given the virtually infinite possibilities of parametric design, the Document is not comprehensive, rather it should be viewed as reference material.

The Design Catalog is a combination of client-facing print and physical media which offers tangible samples of the work created by Alexandria. Physical samples are 3D-printed, laser-cut, CNC-milled, etc. to showcase the breadth of Alexandria's capabilities.

Knowledge Base (Web)

Home to all of the work produced by Alexandria. Latest application releases, respective documentation as well as additional resources such as sample files (for download), case studies, and written research are available here. Each release (public beta, stable releases, and legacy) are published with accompanying sample files (called "Libraries") and version release notes.

PROJECT RESOURCES

Web Resources

Alexandria Project Website (Alexandria Labs, 2025)

Alexandria Labs Knowledge Base and Project Hub

Alexandria Project Documentation and User Resources (Alexandria Labs, 2025)

Access specific documentation for users, contributors, and clients

Latest Companion Document (Alexandria Labs, 2025)

A sample of the work done with Alexandria (PDF)

Developer Resources

Plugin Component Overview (Alexandria Labs, 2025)

See a sorted list of all the components found within Alexandria and some additional details

Pattern Generator Options (Alexandria Labs, 2025)

A comprehensive list of all the possible pattern outputs based on a given list of inputs
(this is a primarily internal document, although it is publicly accessible)

WORKS IN PROGRESS & PROJECT TIMELINES

Ironically, still a work in progress...