Discovery Without Marketing!

Lotus Petal Architecture and Parametric Geometry

Tess Gadwa Product Architect, Lotus.fm March 8, 2020

What Is Content Discovery?

Decrypting Rita, by Margaret Trauth



Decrypting Rita: Imperfect forward secrecy. A graphic novel by Margaret Trauth.







What Is Content Discovery?

"That's the biggest issue we are all tackling."

- Senior Manager, Amazon.com



The Problem with Predictive Algorithms







UX



Parametric Geometry

What Is Parametric Geometry?

Parametric geometry is a way to draw graphics using equations, not pixels.

Three.js - JavaScript 3D animation library released in 2010. Fully web-based. Utilizes WebGL.

Examples:

https://threejs.org/docs/#api/en/geometries/ParametricGeometry

https://threejs.org/

http://dev.lotus.fm/B_U_/examples/index.html



What Are Geometric Links?

The information discovery module adds a link...

"Geometric links typically take the form of lines, curves, or geometric shapes. The Information Discovery Module is a system capable of generating a large number of geometric links *in 3D space.* The module arranges these links to create an interactive data map. Visual cues such as color and shading provide context and navigational hinting, with further detail available on hover or click.

Use of the **Uniform Resource Identifier (URI)** convention permits interaction across networks and transforms the Information Discovery Module from a static display into a dynamic navigation system."

A Front End for Big Data

3D parametric geometry is ideally suited for revealing growth trend data and machine learning insights in datasets of 100 : N records. With node.js integration, there is no upper limit on the amount of data that can be referenced in real time.

- Filters show data points within the context of the entire **data ecosystem**.
- See the "story of the data" by quickly scanning thousands of records at a single glance.
- Applications in securities trading, scientific literacy, epidemiology, real estate, e-commerce, entertainment, market research, and homeland security.
- Accessible from any browser or mobile device; requires no external software.
- Compatible with most REST and JSON API's.

Many Shapes



Interactive data visualization in the shape of an artichoke.

Many Shapes



Interactive data visualization in the shape of a starburst.

Many Shapes



Interactive data visualization in the shape of a grid.

Magically Delicious!



Many Implementations Surf the web again...



An animated news ticker in the shape of a constantly breaking wave.

Many Implementations

"The Forest for the Trees"



A visualization module showing the impacts of climate change across borders.

Many Implementations Visual Search Engine



Preview thousands of search engine results via mouseover on a single page.

Many Implementations



lotus.fm

A visual interface for finding music.

Next Steps

- Develop mobile UX.
- Keyboard and assistive support.
- Code refactoring / improve CPU performance in Firefox.
- Training data for 600+ microgenres.
- Personalized playlists based on deep learning.

Additional Use Cases

A few more embodiments:

- Fractal parametric design of an Information Discovery Module, in which dynamic updates and a fractal design structure are used to order a limitless amount of data in a finite 3D space.
- Virtual reality and augmented reality implementations of the Information Discovery Module.
- A new protocol and/or extensions of existing programming and markup languages specifically addressing the creation and referencing of geometric links and Information Discovery Modules.
- Modifications to Information Discovery Modules and specialized controls for the purposes of accessibility, in particular
 accessibility for low-vision and color-blind individuals.
- Information Discovery Modules designed and generated by artificial intelligence systems (AI).
- Graphical user interface for adding and configuring data flows.

Call to Action

If you'd like to learn more or get involved, please contact me at:

www.artmeetscode.org

@thematizer on Twitter
@tessgadwa on Github

Tips accepted: https://app.lotus.fm/shop/flowers-in-december/

Thanks for your time and interest!



Thank You

Yes Exactly, Inc. - Hosting and Technical Team Support. Pioneer Valley, MA.

Nick Amlee - 3D Graphics. Pioneer Valley, MA

Chad Furman - Web Developer. Pioneer Valley, MA

Roni Madison - Musician in Residence. Portland, OR.

Elliot Frantz - Genre Research. Portland, OR.

Zenchain - Smart Contract Development and Testing. Victoria, BC.

Sky Grady - Social Media Management, Publicity and Marketing. Portland, OR.

Open Invention Network - Durham, NC.

Michael Jonas - Legal Counsel, Business Law and Operations. Portland, OR.

Jeff Schwartz - Intellectual Property Attorney. Charlotte, NC.