

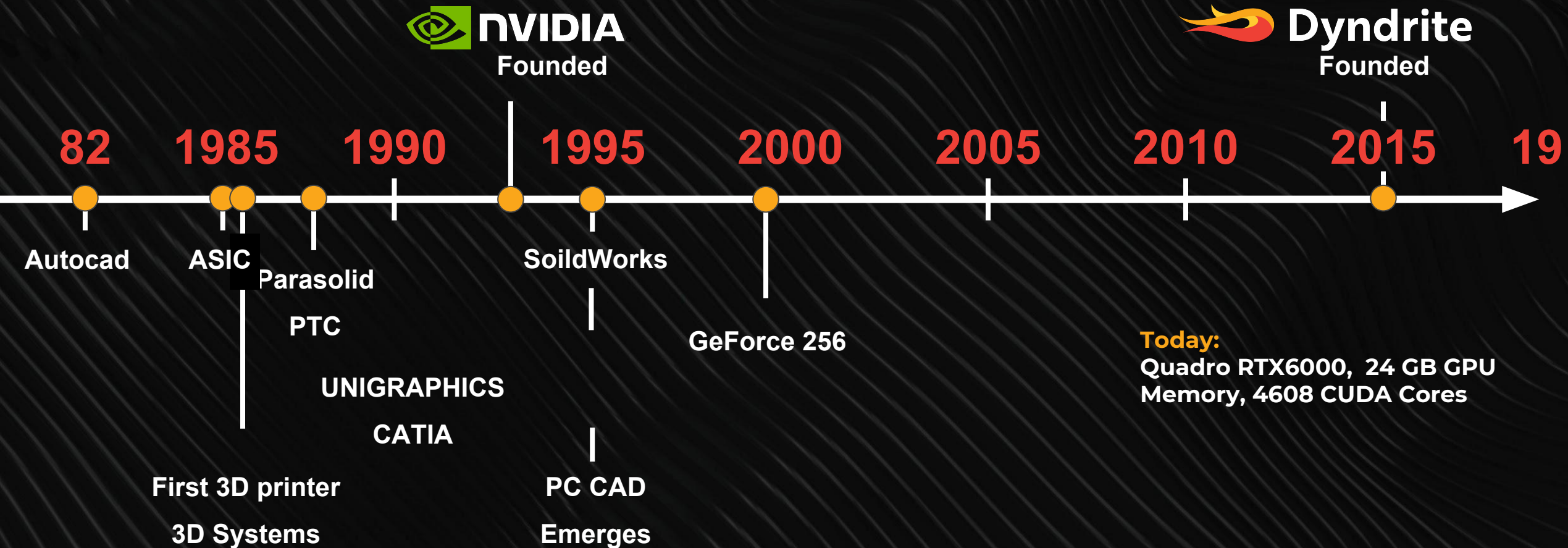


# Dyndrite

Native GPU Accelerated Geometry - A New Era Begins

**When we comes to 3D Computation  
and Geometry - We're Stuck in the Past.**

# Quick History CAD/CAM Geometry Kernels



## **AS A RESULT:**

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- Manufacturing Hardware Has Outpaced the Software
- Modern Design and Production Needs Not Being Met by Current Solutions
- Workflows Mired in Cumbersome App Switching and File Repairing

# HOW ARE GPUS PREDOMINANTLY USED IN CAD/CAM?

- FROM A COMPUTATION STANDPOINT:

Rendering and animations

- FROM A MEMORY STANDPOINT:

Larger and larger models due to memory increases every year.

# MODERN DESIGN TRENDS

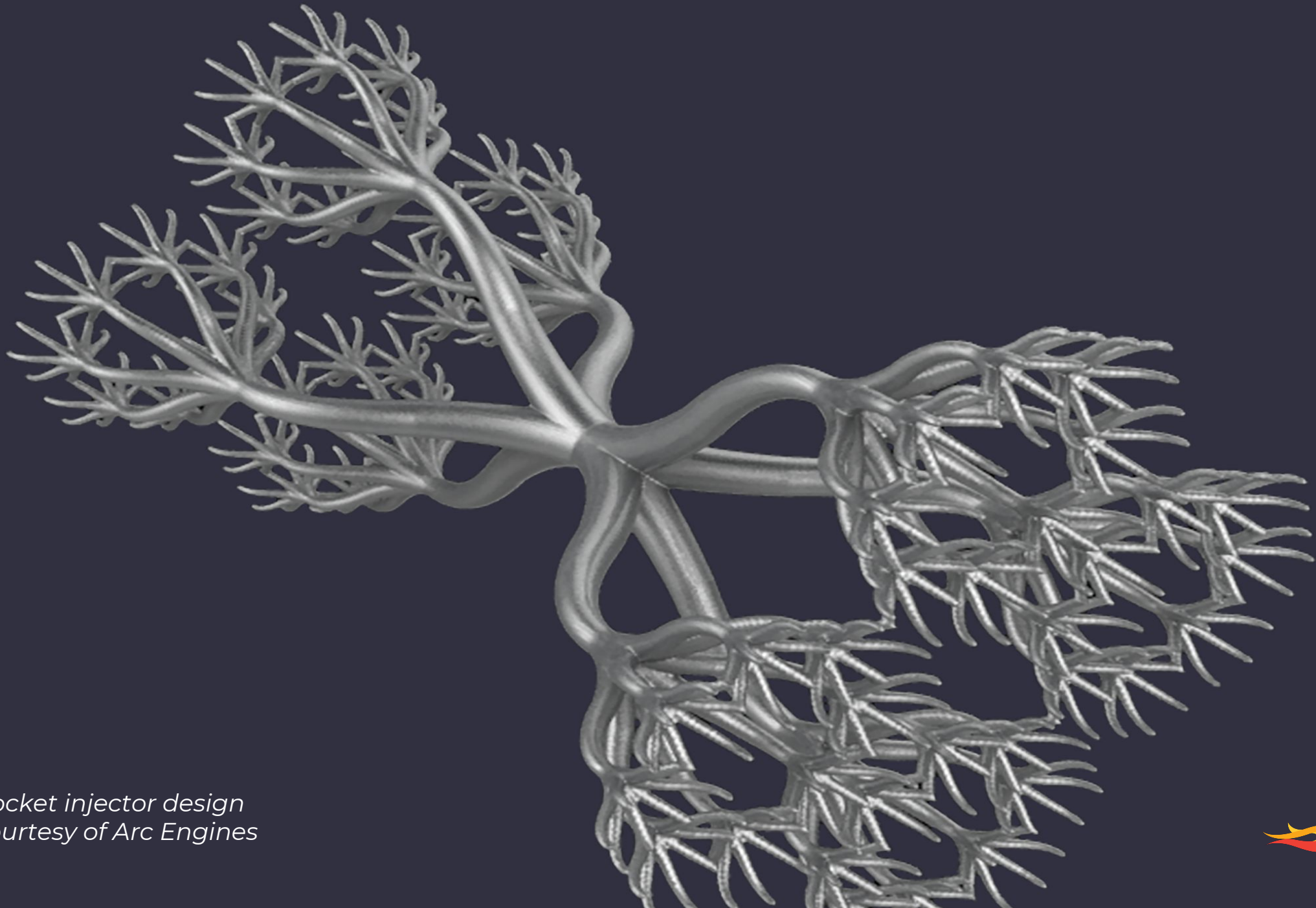
## ● MODERN DESIGN:

- Getting more and more complex
- New manufacturing methods
- Iteration time and trade studies
- Costs to simulate/prototype
- Demographic shift of engineers, designers & technicians

# MODERN MANUFACTURING TRENDS

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- MODERN MANUFACTURING:
  - Additive manufacturing toolpath generation
  - Complex geometry processing
  - Precise control and variance every 50 – 100  $\mu\text{m}$ .
  - On the fly adjustment and control
  - Data explosion and lazy evaluation



*Rocket injector design  
courtesy of Arc Engines*



# **Introducing Dyndrite's Accelerated Computation Engine**

World's First Fully GPU-Native 3D Geometry Kernel

# Let's Not Code Like It's 1998

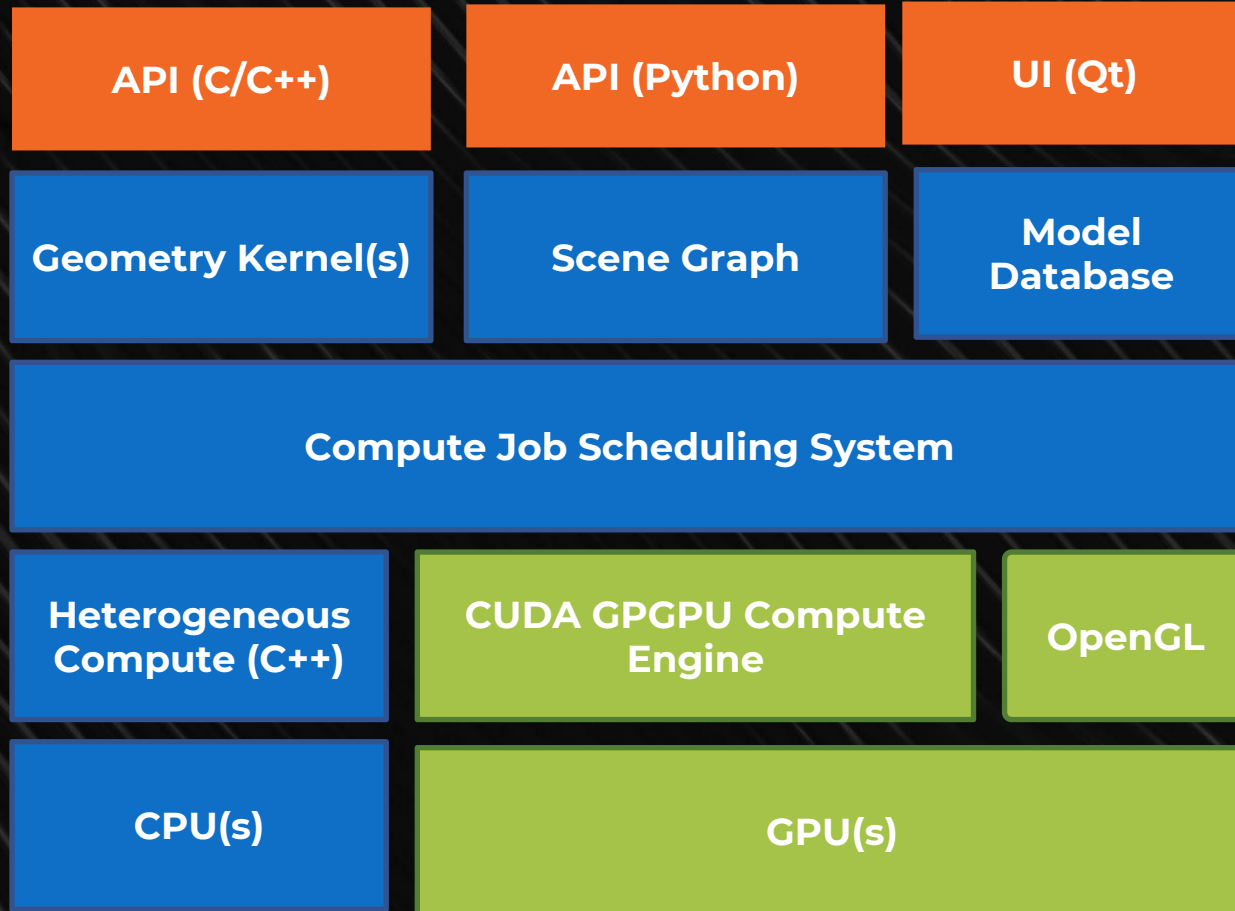
API (C/C++)

Geometry Kernel(s)

What's Missing?

- Geometry Kernel provides surface creation, stitching, and tessellation method
- Ancient API requires experts
- Build a house by first searching for sand and clay

# Developer Focused Technology Stack



- Start with the essential tools needed to build an application
- Democratize GPU development beyond experts
- Rapid Prototyping Using Python API
- Debug from Python API into C++ API
- Develop print drivers for OEM machine vendors

CASE STUDY:

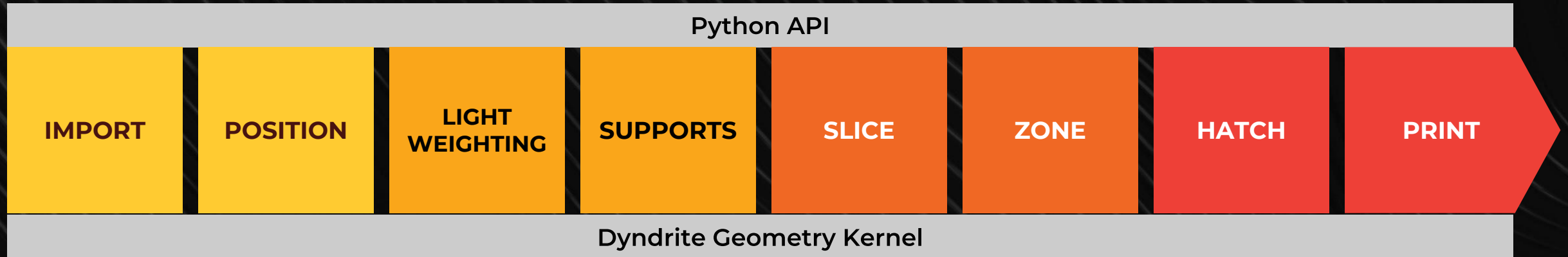
# **Dyndrite Additive Toolkit + 3D Print Driver**

# Dyndrite Additive Toolkit

Robust, Powerful, and Scriptable Build Processor - 1st App Built on Dyndrite  
Streamlines, Optimizes, & Augments End-to-End Workflow

File / Geometry Interoperability

Native Geometry (Spline) Slicing



Sophisticated Lattice and Support Geometry

Customized Tool Path Control

DEMO



“Dyndrite puts the power of computational geometry in the hands of anyone. We’re excited to be one of the first companies exploring the applicability of this new technology”

**Ryan Petterson, CEO**

**flexport.**



**What Will You Build?**

Q & A





# Dyndrite

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