# Dossier: PHYSNA INC

## SBIR Award Details

**Award Title:** N/A

**Amount:** $1,900,000.00

**Award Date:** 2024-06-17

**Branch:** USAF

## AI-Generated Intelligence Summary

**Company Overview:**

Physna Inc. is a deep learning company specializing in geometric deep learning and 3D model search. Their core mission is to revolutionize how engineers, manufacturers, and enterprises search, analyze, and interact with 3D data by creating a comprehensive, searchable index of the physical world. They aim to solve the problem of efficiently identifying, comparing, and understanding 3D models, enabling applications such as design reuse, supply chain optimization, counterfeit detection, and intellectual property protection. Physna's unique value proposition lies in its ability to analyze the geometric structure of 3D models, enabling it to identify similarities and relationships even if the models are stored in different formats, have been modified, or are presented in incomplete or noisy data. This geometric understanding goes beyond traditional keyword or metadata searches, providing a deeper and more accurate representation of the physical object.

**Technology Focus:**

* 3D Model Search Engine:\*\* Physna's flagship technology uses geometric deep learning to analyze the shape and structure of 3D models, creating a unique "geometric fingerprint" for each object. This allows users to search for similar parts regardless of file format, metadata, or modifications. This index covers hundreds of millions of 3D models and grows daily.
* Geometric Deep Learning API:\*\* Physna offers a comprehensive API suite that allows developers to integrate their geometric search, comparison, and analysis capabilities into existing workflows and applications. This enables them to build customized solutions for their specific needs, such as design automation, part classification, and supply chain optimization.

**Recent Developments & Traction:**

* Series B Funding (October 2020):\*\* Physna secured $20 million in a Series B funding round led by GV (formerly Google Ventures), with participation from Sequoia Capital, Drive Capital, and Venture Smarts. This funding has been used to expand their platform capabilities and go-to-market efforts.
* Partnership with the US Air Force (Ongoing):\*\* Physna has multiple contracts with the U.S. Air Force to apply their technology to problems such as identifying counterfeit parts, improving maintenance processes, and optimizing supply chains. Their solutions aid in maintaining critical defense systems.
* Expanded Platform Capabilities (Ongoing):\*\* Physna has consistently expanded its platform capabilities, including improved support for different file formats, advanced search algorithms, and new APIs for developers. These continuous enhancements are intended to broaden its applicability across industries.

**Leadership & Team:**

* Paul Powers (CEO):\*\* A serial entrepreneur and inventor with experience in AI, computer vision, and 3D modeling. Prior to Physna, he founded and led multiple technology companies, focusing on solving complex problems in data analysis and pattern recognition.
* Ruslan Yusupov (CTO):\*\* An expert in machine learning, computer vision, and 3D geometry. Holds multiple patents in the field. He has extensive experience in developing and deploying AI-powered solutions for various applications.

**Competitive Landscape:**

* ThomasNet:\*\* A directory of industrial suppliers and manufacturers. Differentiator: Physna goes beyond traditional directory listings by providing geometric deep learning analysis and geometric search, enabling deeper part understanding and discovery compared to ThomasNet's keyword-based search.
* 3DShape GmbH (part of Dassault Systèmes):\*\* Offers shape search and similarity analysis tools. Differentiator: Physna's platform is independent of specific CAD systems and formats, and focuses on analyzing the actual geometric structure of the 3D models.

**Sources:**

* [https://physna.com/](https://physna.com/)
* [https://news.crunchbase.com/news/physna-geometric-search-funding/](https://news.crunchbase.com/news/physna-geometric-search-funding/)
* [https://www.cbinsights.com/company/physna](https://www.cbinsights.com/company/physna)
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