

## **ANIAI, INC.**

REVOLUTIONIZING THE WAY RESTAURANTS ARE RUN VIA AI-DRIVEN KITCHEN ROBOTICS WITH **3DEXPERIENCE** WORKS SOLUTIONS

### Case Study



Aniai chose to implement **3DEXPERIENCE** Works modeling, design, simulation, data management, collaboration, communication, product release, and manufacturing solutions, which operate on the cloud-based **3DEXPERIENCE** platform, over other cloud-based solutions because the platform stands out for offering a comprehensive PLM (product lifecycle management) solution. **3DEXPERIENCE** Works goes beyond mere design tools so the company's product development operation can scale up to meet strong demand for its robotic Alpha Grill, shown here.

### Challenge:

Scale up development of artificial intelligence—driven kitchen robots in response to exponential growth—resulting in an eightfold expansion of the Mechanical Systems team, the establishment of new departments, and a shift from individual-centric work to a more collaborative, team-oriented approach—through a rapid, reliable, secure, and cost-effective product lifecycle management (PLM) implementation.

### Solution:

Implement 3DEXPERIENCE Works modeling, design, simulation, data management, collaboration, communication, product release, and manufacturing solutions, which operate on the cloud-based 3DEXPERIENCE platform.

### Results:

- Reduced design cycles by 20 percent
- Shortened time to market by 20 percent
- Cut development costs by 30 percent and prototyping costs by 40 percent
- Decreased design errors by 50 percent and manufacturing costs by 10 percent

Founded in 2020 and headquartered in New York City—with development and manufacturing operations based in Seoul, Republic of Korea—Aniai, Inc., is a global innovator of automation and artificial intelligence (AI) technologies within the food service sector. The company's mission is to empower restaurants to improve their kitchen operations by delivering intelligent solutions that increase production, reduce costs, enhance quality, and improve service.

Aniai's first product, the Alpha Grill, employs advanced robotics and real-time sensory feedback to optimize the cooking process for hamburgers, ensuring consistent quality and efficiency, and boasting a double-sided grill that can cook up to eight patties simultaneously or 200 patties per hour. This innovative solution addresses common challenges in fast-food kitchens such as consistency in cooking, labor shortages, and efficiency in high-volume operations. When the Alpha Grill is deployed in a kitchen, restaurant brands can



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– KangKyu Lee, Technical Lead

streamline operations by eliminating repetitive tasks associated with hamburger patty cooking, such as pressing and flipping. This system significantly cuts down cooking time and reduces physical strain on kitchen staff, allowing them to focus on more critical culinary tasks. Additionally, Aniai is in the process of enhancing its robotic solutions by integrating sophisticated AI algorithms that learn and adapt from each cooking cycle, hosted on a secure, scalable cloud platform, to further improve the capabilities and performance of the Alpha Grill.

The company's technology has elicited powerful demand, with the Alpha Grill being utilized by several leading North American hamburger brands as well as seven South Korean hamburger franchises. This strategic approach has successfully secured over 500 preorders for the Alpha Grill, demonstrating robust market demand and laying a strong foundation for future global expansion. This strong demand has pushed the Korean startup to evaluate its product development and manufacturing tools with an eye toward rapidly scaling up Aniai's operations.

Until 2023, Aniai designers used a variety of modeling and design tools based on individual preference, including SOLIDWORKS®, Fusion 360®, Onshape®, Siemens® NX®, and AutoCAD® software. However, the need to rapidly scale up the company in response to exponential growth—including a sixfold increase in the workforce, an eightfold expansion of the Mechanical Systems team, the

creation of new departments, and a shift from individual-centric work to a more collaborative, team-oriented approach—prompted company management to evaluate more capable cloud-based solutions, according to Technical Lead KangKyu Lee. “The surge in the size and complexity of our organization highlighted the need for an efficient, companywide management system,” Lee recalls.

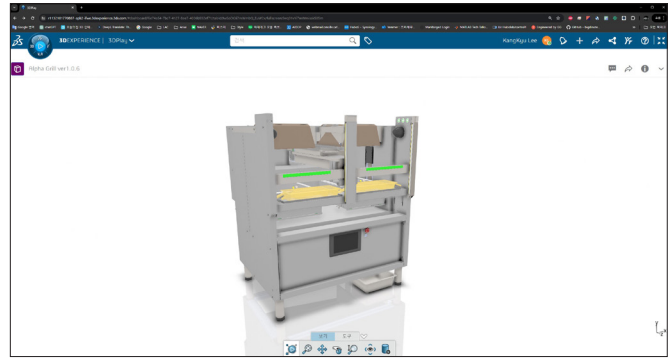
After evaluating several cloud-based product development platforms, Aniai chose to implement **3DEXPERIENCE**® Works modeling, design, simulation, data management, collaboration, communication, product release, and manufacturing solutions, which operate on the cloud-based **3DEXPERIENCE** platform. “In evaluating other cloud-based product development platforms, we found that the Dassault Systèmes **3DEXPERIENCE** platform stands out for offering a comprehensive PLM [product lifecycle management] solution that goes beyond mere design tools,” Lee explains.

“This system encompasses all the necessary functionalities to support a company’s growth, eliminating the need to switch solutions in the future,” Lee concludes. “By moving our product development and manufacturing operations to the **3DEXPERIENCE** platform in the cloud, we have increased productivity; eased IT, hardware, and administrative costs; improved communications; compressed workflows; and boosted innovation.”

### **ACCELERATING TIME TO MARKET**

Since implementing **3DEXPERIENCE** Works solutions, Aniai has realized time savings that have reduced both its design cycles and time to market by 20 percent. “The **3DEXPERIENCE** platform significantly boosts productivity by fostering a work environment centered around a unified source of truth,” Lee stresses. “This aspect proves especially valuable during the concept design and development phases, when multiple stakeholders can evaluate designs using the latest information. This approach streamlines the design-feedback cycle, resulting in quicker development and faster times to market.

“Through the **3DEXPERIENCE** platform, our team collaborates smoothly in a cloud-based environment, ensuring access to the latest data and clear



Using **3DEXPERIENCE** Works solutions, the Aniai Mechanical Systems team can collaborate more effectively in the cloud around a single source of truth, resulting in shorter design cycles, faster time to market, and reduced development and manufacturing costs.

ownership of design changes,” Lee continues. “It also facilitates communication across departments, allowing easy sharing of models, drawings, and documents on a web-based platform, even for those who don’t use specialized 3D CAD programs.”

### **SLASHING DEVELOPMENT AND MANUFACTURING COSTS**

Using **3DEXPERIENCE** Works simulation, data management, product release, and manufacturing solutions, Aniai has cut its development costs by 30 percent and prototyping costs by 40 percent. The company has also slashed manufacturing costs by 10 percent as a result of a 50 percent decrease in design errors through tighter revision controls. “Developing a kitchen robot involves addressing a series of intricate engineering challenges because kitchen robots need to apply heat and force to ingredients to cook food, which involves a lot of motion,” Lee notes. “The **3DEXPERIENCE** platform significantly aids in this phase by providing an

integrated platform for simulations, which streamlines the verification process and contributes to a robust and reliable design.

“Further complicating the development of these robotic kitchens is the need to condense the capabilities of a full-scale food factory into the confines of a domestic kitchen,” Lee adds. “The robots must be proficient in various areas, such as cooking quality, productivity, cleaning, installation, and maintenance, all while fitting into small kitchen spaces. This challenge demands the management of complex component interactions. Here, the **3DEXPERIENCE** platform’s integrated data system becomes invaluable, offering rapid feedback for adjustments and optimizations. This capability is crucial for ensuring that the robots operate efficiently within limited spaces, maintaining high performance and functionality standards.”

### A RAPID, RELIABLE, AND AFFORDABLE PLM IMPLEMENTATION

Aniai’s top requirement for supporting its explosive growth was the rapid implementation of a reliable and affordable PLM system, which the **3DEXPERIENCE** platform’s cloud-based, transparent data management provides. “We sought a solution that could streamline collaboration and address concerns such as server construction costs, time constraints, and security issues,” Lee explains.

“The **3DEXPERIENCE** cloud-based platform stood out for its ability to solve these problems completely by simply logging in, and for the flexibility it provides for head count changes,” Lee points out. “This choice marked a significant milestone in our company’s evolution, perfectly aligning with our dynamic and growing operational needs.”

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### Products

- **3DEXPERIENCE SOLIDWORKS Premium**
- **3DEXPERIENCE SOLIDWORKS Professional**
- **3DEXPERIENCE SOLIDWORKS Simulation Designer**
- 3D Creator
- 3D Sculptor
- Collaborative Industry Innovator
- Manufacturing Definition Creator
- Manufacturing Item Engineer
- Manufacturing Process Engineer
- Product Release Engineer
- 3DSwymer

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