

Daeun Jung

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Education

Seoul National University

Expected Feb 2028

B.S. in Biosystems Engineering

Minor in Materials Science Engineering

GPA: 3.7/4.0

University of California, Irvine

Jan 2026 – Jun 2026

Exchange Student in Mechanical Engineering

Experiences

Research Intern

Jul 2025 – Present

Agricultural Biomechanics & Biological Engineering Laboratory, Seoul National University

- Conducted research on extrusion-based 3D printing technologies for plant-based and cultivated meat applications
- Developed and optimized bioink and food ink formulations for printability and structural fidelity
- Designed experimental components and fixtures using Fusion 360 for custom research setups
- Performed literature reviews on 3D bioprinting and present findings at weekly lab meetings

Projects

Printability Optimization of Plant-Based Fat Ink for 3D Food Printing

Jul 2025 – Aug 2025

- Designed 5 emulsion-based fat ink formations (0-2% xanthan gum) to evaluate printability
- Controlled extrusion parameters to optimize structural fidelity of printed geometries
- Quantitatively assessed dimensional accuracy by measuring diameter and height deviations from target values
- Identified optimal formulation (64.675% oil, 34.825% SPI, 0.5% xanthan gum) achieving highest structural stability and shape fidelity
- Analyzed phase separation and extrusion behavior under high-viscosity conditions

Development and Implementation of Film-Based Meat Spoilage Indicators

Mar 2026 – Present

Food Systems Innovation Challenge 2026 (Wageningen University)

- Developing an electrospun film-based spoilage indicator for intelligent meat packaging
- Investigating spoilage-responsive materials and volatile compound sensing mechanisms through literature review
- Contributing to prototype development, validation planning, and food-system implementation strategy
- Presenting the project at the international Grand Final of the Food Systems Innovation Challenge

Vehicle Frame Structural Design & FEA Optimization

Mar 2026

- Designed and optimized a tubular vehicle frame using SolidWorks and finite element analysis (FEA)
- Established side impact, frontal impact, and rollover loading scenarios with appropriate support constraints
- Performed iterative structural optimization by modifying hollow-section thickness and integrating reinforcement bars
- Reduced peak von Mises stress by up to 45% while maintaining structural displacement.

Technical Skills

Programming: Python

CAD: Fusion 360, SOLIDWORKS

Research Technics: Extrusion-based 3D Printing, Bioink Formulation

Honors

Korea-U.S. Exchange Program for Youth in Advanced Fields

2025

Korea Institute for Advancement of Technology (KIAT)

- Selected for a competitive Korea-U.S. advanced industry exchange program (\$9,000 award)

Dean's Honor List

Spring 2026

University of California, Irvine

Academic Excellence Scholarship

2024 – 2025

Seoul National University