

Younghoo Henry Cho

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Summary

Backend and data-infrastructure engineer specializing in distributed systems, verification, and cross-system data pipelines. Ship full-stack platforms end-to-end — smart contracts, REST APIs, LLM-integrated web UI — with a Ph.D. foundation in agricultural data systems and prior work in applied computer vision for marine production.

Technical Skills

Backend & Distributed Systems: Hyperledger Fabric, Go, Node.js, Express, REST APIs, gRPC

Data & Pipelines: Apache Airflow, Apache Spark, Apache Kafka, PostgreSQL, MySQL, MongoDB, CouchDB, Firebase

Cloud & DevOps: AWS, Azure, Docker, Kubernetes, CI/CD (GitHub Actions), Git, Linux

Applied AI & Vision: LLM Integration, PyTorch, YOLO, SAM, OpenCV

Languages: Python, Go, JavaScript, Java, C, C++, R

Experience

Graduate Research Assistant, University of Florida

Aug 2022 – Aug 2026

- Own the full stack of a cross-system agricultural data platform — smart contracts, REST APIs, data pipelines, web UI — shipped solo and used in funded-project demonstrations.
- Built distributed-ledger backends on Hyperledger Fabric (Go) with Node.js/Express service layers, delivering sub-5s trace queries across 8,000+ linked records.
- Designed ingestion and verification pipelines using Airflow jobs, Kafka event streams, and Spark batch aggregations over file-level metadata.
- Delivered reproducible documentation and demo code adopted by external collaborators without direct handoff.

Researcher, Ministry of Agriculture, Food and Rural Affairs

2024 – 2025

- Delivered a comparative analysis of crop mechanization and digital-agriculture adoption between South Korea and the United States, used for cross-country technology and policy benchmarking.

Researcher, Billion21

2019 – 2022

- Built production-facing computer-vision pipelines (YOLO, SAM, OpenCV) for marine monitoring and automated feeding, reducing manual inspection effort in live aquaculture operations.
- Contributed detection and segmentation components that fed into two filed patents on blockchain-tracked seaweed farming and spore selection.

Undergraduate Research Assistant, Texas Tech University

2021 – 2022

- Shipped reusable computer-vision and data-visualization components adopted by subsequent lab projects.

Researcher, Global BioAg Linkages

2020 – 2021

- Scoped technical and data requirements for AI deployment in agricultural production systems, informing design decisions for downstream pilot projects.

Selected Projects

DEMETER — Agricultural Data Sharing Platform

2022 – 2026

- Architected and shipped a full-stack verification platform end-to-end: Go smart contracts on Hyperledger Fabric, Node.js/Express REST backend, LLM-integrated query layer, and web UI — handling 8,000+ linked records with sub-5s trace latency.
- Designed ingestion around Airflow jobs, Kafka event streams for file-registration events, and Spark batch aggregation over ledger history; deployed via Docker containers with CI-driven build and test.

AI-Based Computer Vision for Marine Production Systems

2019 – 2022

- Built detection and segmentation pipelines (YOLO, SAM, OpenCV, Python) for automated feeding and monitoring, shipped into product-side workflows; core components translated into two filed patents.

Education

University of Florida — Ph.D., Agricultural and Biological Engineering, GPA: 3.95/4.0

Aug 2022 – Expected Aug 2026

Texas Tech University — B.S., Computer Science, Minor in Mathematics, GPA: 3.8/4.0

Aug 2015 – Jul 2022

Selected Publications

- Cho, Y., Yu, Z., & Ampatzidis, Y. *DEMETER: A Blockchain-Based Platform for Tracking the History of Shared Agricultural Data Files*. Under review.
- Cho, Y., Yu, Z., & Ampatzidis, Y. *Facilitating a Future Agricultural Data Ecosystem: A Cross-Sectoral Review of Blockchain Application in Data Sharing*. Under review.
- Cho, Y., Yu, Z., & Ampatzidis, Y. (2025). *Bridging Carbon Markets and Agriculture: A Comparative Study of Stakeholder Engagement in South Korea and United States*. *Discover Agriculture*, 3, 126.

Patents

- *Efficient Seaweed Farming Data Management by Utilizing Blockchain and Smart Supply Chain Tracking System for Seaweed Products Using the Same*. KR10-2024-0011399, 2024. Status: Pending.
- *Methods for Selecting Spores from Laver Farm Devices*. KR102034354B1, 2019. Status: Granted.