



Verdancer™

AI Powered Modular Aeroionics
by Burgeon Systems, Inc



Mission

We design technology that learns, self-regulates, and scales, bringing independence, resilience, and beauty to the systems that sustain us.

Problem

- Global food systems are centralized, wasteful, and carbon-intensive.
- Agriculture consumes most of our freshwater and degrades soil and ecosystems.
- Urban populations lack access to fresh, affordable, sustainable produce.
- Existing home-growing systems are costly, unattractive, and hard to use.
- People want food independence, but technology hasn't made it simple yet.

Solution

Verdancer, a fully autonomous, modular aeroponics system powered by Verdyx AI.

- We combined precision hardware, sensor networks, and adaptive learning to grow fresh produce automatically with no soil, no expertise, and minimal resources.
- Each unit functions as an intelligent, self-contained ecosystem that learns from its environment and connects to a global decentralized food network, improving efficiency across every user.
- By merging AI, robotics, and sustainability into a consumer-ready product, Verdancer enables food autonomy at home and transforms how people produce and access food..

Key Differentiators

- Fully autonomous operation that self-regulates water, nutrients, light, and airflow for hands-free growing.
- Powered by Verdyx AI: Learns locally, improves globally through adaptive digital twins.
- Modular system: Scales from a single home unit to multi-unit networks.
- Decentralized food network: Every Verdance becomes part of a connected, sustainable ecosystem.
- Design-led: Built to be as beautiful as it is functional — sustainability meets luxury.
- Future-proof: Repairable, ethical, and designed to last a generation.

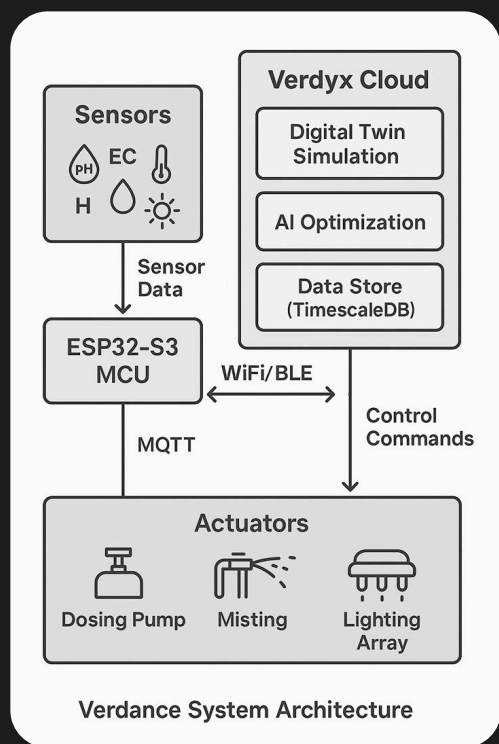
Market Opportunity

- \$18.1B U.S. home gardening market with strong year-over-year growth.
- Nearly half of Gen Z and Millennials are open to growing food at home with the right tools.
- Food resilience and sustainability are rising priorities post-COVID and amid climate volatility.



How Verdance Works

Verdance integrates sensors, edge computing, and cloud-based AI into a closed feedback loop that autonomously optimizes plant growth while building a global decentralized food network through federated learning.



Core System

- Sensors: Monitor EC, pH, humidity, temperature, and light for real-time environment tracking.
- Gantry-Mounted Camera: Captures plant imagery for computer vision and digital twin modeling.
- Microcontroller (ESP32-S3): Manages local communication and control between sensors and actuators.
- AI Compute (NVIDIA Jetson Orin): Runs edge inference, computer vision, and autonomous decision-making.
- Actuators: Regulate misting, dosing, lighting, and airflow for fully automated plant care.
- Connectivity: WiFi/BLE and MQTT enable secure data exchange between Verdance units and Verdyx Cloud.
- Verdyx Cloud: Powers digital twin simulation, AI optimization, and federated learning across devices.
- User Interface: Mobile and web app for insights, remote monitoring, and growth analytics.

Roadmap

- Now – Aug 2025: Alpha lo-fi prototype
- Sep 2025: \$1.2M seed round to develop 20 Hi-fidelity Beta units
- Q2 2026: 100-unit pilot program + FCC/CE compliance

Core Team & Advisors

- **Hari Von Wintr** — Founder & CEO
(Founder, Wyntre Studios – leading creative tech studio)
- **Diane Wagner** - AI lead | MSc Machine Learning - University of Freisberg
- **Ian Bartels** - Field Research Contributor
- **Caleb Bucchianeri** - Cybersecurity Ops Contributor

verdance

Contact

Hari Von Wintr
hari@burgeonsystems.com
+277 6043 2318

Coming soon

hari@growburgeon.com
www.growburgeon.com
[@growburgeon](https://www.instagram.com/growburgeon)

Sources & Proof

→ Consumer Behavior & Market Opportunity

- National Gardening Survey 2022 – 80% of Americans cite lack of time, space, or complexity as barriers
- Mintel Sustainability Report (2022) – 49% of Gen Z & Millennials open to growing at home
- Grand View Research 2023 – U.S. Home Gardening Market estimated at \$18.1B, 8% CAGR
- Deloitte “Future of Food” White Paper (2023) – Emphasis on post-COVID resilience

→ Traditional Vertical Farming Constraints

- AeroFarms, Bowery, Plenty public estimates – Typical commercial vertical farms require \$50M+ in infrastructure
- USDA Report (2021) – ~30% food loss occurs post-harvest due to logistics and spoilage

→ Limitations of Existing Consumer Systems

- TechCrunch & The Verge (2022–2024) reviews – Aerogarden, Click & Grow, LettuceGrow cited for refill cost, manual steps, lack of smart automation
- Consumer complaints often focus on usability, maintenance friction, and lack of autonomy

→ Aeroponics Validation

- NASA & University of Arizona studies – Aeroponic systems show 30–50% faster growth rates and 90–95% less water use than soil-based agriculture
- Vertical Farming Academy (2023) – Validated closed-loop water efficiency benchmarks

→ Engineering & System Design Inspiration

- Digital twin control modeled after Siemens, GE aerospace applications
- Consumer installation experience inspired by Dyson, Brava, Ember, and Molekule
- IoT micro-farm decentralization modeled on energy systems like Tesla Powerwall and EcoFlow