Sam Snyder

Engineer — Entrepreneur — Innovator

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Profile

Robotics and automation engineer with a decade of hardware experience spanning motor-driven systems, robot arm kinematics, and autonomous systems R&D. Currently leading UAV autonomous systems development in active forward deployment (Ukraine) and building a ROS2-controlled 6-DOF robotic arm for a client. Deep hands-on background in stepper and actuator control, precision manufacturing (5-axis CNC, DFM/DFA, superconducting magnet production), and full-stack integration from firmware (micro-ROS, ESP32-S3) through motion planning (MoveIt2) to computer vision. Previously co-founded a VC-backed startup, raised $2.7M backed by founders of Unity, Google Maps, and Zynga, and achieved a profitable exit via acquisition in 2019.

Core Competencies

Robotics & Controls	ROS2 Jazzy, micro-ROS, MoveIt2, Stepper Motor Control (STEP/DIR), Robot Arm Kinematics, ESP32-S3, Autonomous Systems, UAV R&D
Manufacturing	High-Rate Production, DFM/DFA, GD&T, Rapid Prototyping, Superconducting Magnet Fabrication
Engineering Tools	SolidWorks, Fusion360, Rhino 3D, KiCAD, FEA (ANSYS), MATLAB, Python, C++, CAM
Leadership	Startup Co-Founder, Venture Fundraising, Cross-Functional Team Management (8–12 engineers)

Professional Experience

Nov 2025–Present — **UAV Systems Engineer (Contractor)**, *Ukrainian Unmanned Vehicle Battalion*, Kharkiv, Ukraine

- Contracted to develop and deploy remote drone launch systems to forward positions, enabling pilots to operate from safe standoff distances of 5–10 km beyond the zero line of contact.
- Designed remote-activated launch boxes for one-way attack drones, eliminating the need for pilots to advance into high-threat areas and significantly reducing operator casualties.
- Developed motion-sensor hibernate/sleep mode for kamikaze drones with autonomous target activation; improved strike success rates by 60–75% in contested EW environments through reduced RF detectability.

Feb 2026–Present — **Robotics Engineer (Personal Project)**, *6-DOF Robotic Arm*, Austin, TX

- Building a 6-DOF robotic arm targeting autonomous CV pick-and-place; ROS2 Jazzy on Raspberry Pi with MoveIt2 for motion planning and IK trajectory execution end-to-end.
- Migrating stepper control to ESP32-S3 running micro-ROS: 5× STEP/DIR drivers, PCA9685 for 7-servo Aero Hand gripper, I2C IMU(s), OTA firmware updates.
- Developing OpenCV + ROS2 pipeline for object detection and pose estimation driving fully autonomous pick-and-place cycles.

May–Nov 2025 — **Head of Automation**, *Pascal Tags*, Louisville, KY

- Led full automation of Nordson ProPlus4 robotic syringe printer using Rockwell Allen-Bradley Micro 820 PLC. Designed custom multiplexed binary protocol over 8 digital I/O channels with deterministic FIFO sequencing, fiducial compensation, and UV cure control.
- Developed FastAPI + WebSocket HMI (pycomm3 Ethernet/IP) for real-time monitoring, job upload, and operator control. Scaled production from 42 tags/hour (semi-manual) to fully automated, traceable output.
- Designed 3D-printed fixtures and automated FR4 card-scanning system. Created scaling roadmap and CapEx model targeting 5M–10M tags/year.
- Engineered vision-guided automation solutions for DoD uniform tagging and Brown-Forman barrel-tagging applications.

Apr 2024–May 2025 — **Director of Production**, *Canyon Magnet Energy*, Stony Brook, NY

- Oversaw production of superconducting electromagnets for fusion and space propulsion systems.
- Designed and built robotic winding table for REBCO high-temperature superconducting tape — core manufacturing process for next-generation electromagnets; reduced production cost by 60% and increased throughput by 30%.
- Led technical pitches securing partnerships with fusion and aerospace stakeholders.

2019–2024 **Engineering Director**, *AJC*, New York, NY

- Directed precision manufacturing for metal foundry serving Apple and Samsung using 5-axis CNC and 3D printing.
- Achieved 150% YoY growth, doubling client base to 50+ clients and reducing production timelines by 62%.

2016–2019 **Co-founder & COO**, *Gamma Innovations, Inc.*, Los Angeles, CA

- Co-founded distributed GPU/CPU compute platform; raised $2.7M backed by David Helgason (Unity founder), Lars Rasmussen (Google Maps creator), Mark Pincus (Zynga founder), and Greycroft.
- Scaled to 550K installs and 28K peak WAU; reached profitability Feb 2019; acquired by Animoca Brands Jun 2019.

Education

2023–2025 **Physics (transferred from NYU; left before degree completion)**, *Stony Brook University*, Stony Brook, NY

2021–2023 **Mechanical Engineering (partial; transferred to Stony Brook)**, *NYU Polytechnic*, New York, NY

2009–2012 **Product Design**, *Parsons The New School*, New York, NY

Technical Skills

Robotics	ROS2 Jazzy, micro-ROS, MoveIt2, ESP32-S3, Arduino, Stepper Motor Control (STEP/DIR), OpenCV, PCA9685, Raspberry Pi
CAD / CAM	SolidWorks, Fusion360, Rhino 3D, KiCAD, AutoCAD, FEA (ANSYS), MATLAB
Manufacturing	3D Printing (incl. nonplanar), GD&T, Rapid Prototyping, High-Rate Production, DFM/DFA
Software	Python, C++, PLC (Rockwell), Distributed Systems