

Nayan Narne

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EDUCATION

University of Illinois Urbana-Champaign

B.S. in Systems Engineering and Design, Autonomous Systems and Robotics Track

August 2023 – May 2027

Urbana, Illinois

EXPERIENCE

Autonomous Drone Engineering Intern

Seasats

June 2026 – August 2026

San Diego, California

- Led the end-to-end hardware and software integration for a multi-drone payload system on uncrewed surface vessels (USVs), successfully deploying and autonomously recovering drones in maritime environments.
- Designed and rapidly prototyped multiple custom quadcopter airframes, engineering a rigid structural aluminum chassis to act as a heatsink for high-power digital video transmitters, resolving critical thermal failures.
- Engineered a precision autonomous landing system utilizing downward-facing cameras, AprilTag visual servoing, and time-synchronized frame alignment to achieve an 92% landing success rate on moving vessels.
- Managed BOMs for multiple NDAA-compliant hardware tiers and executed a rapid iteration cycle of physical testing, field repair, and Gazebo SITL simulation to validate avionics and flight logic.

Lab Production Technician

Tiptek, LLC

October 2025 – January 2026

Savoy, Illinois

- Fabricated precision components for semiconductor manufacturing, adhering to strict manufacturing standards.
- Optimized Standard Operating Procedures (SOPs) for cleanroom production, reducing defect rates by 15% through iterative Quality Control (QC) validation using high-magnification microscopy.
- Managed comprehensive quality reports and production logs to ensure traceability and adherence to SOPs.

Head of Design and Manufacturing

Illini Autonomous Vehicles (IAV)

January 2024 – Present

Champaign, Illinois

- Pioneering a first-of-its-kind petrol-electric hybrid power module and custom high-density battery pack to triple the flight endurance of the SUAS competition drone.
- Designed a crash-resilient monocoque drone chassis in SolidWorks by optimizing load paths to withstand high-G impact forces and implementing fail-safe structural redundancies.
- Overhauling the PX4 flight stack with custom control algorithms to enhance autonomous navigation in high-turbulence environments.
- Directing the fabrication and assembly of competition-ready aircraft, ensuring structural integrity and aerodynamic efficiency for autonomous waypoint execution.

PROJECTS

Fixed-Wing Autonomous Survey UAV | *SolidWorks, Ansys, ArduPilot*

November 2024 – August 2025

- Conducted Computational Fluid Dynamics (CFD) analysis in SimScale to optimize lift-to-drag ratios, resulting in a 23% increase in glide efficiency.
- Designed a modular, fully 3D-printable airframe optimized for Field-Replaceable Unit (FRU) capability, reducing maintenance downtime by 50%.
- Logged 20+ hours of autonomous flight testing at altitudes up to 1000 ft, validating ArduPilot stability and autonomous photogrammetry payloads for high-resolution mapping.

TECHNICAL SKILLS

Design & Simulation: SolidWorks, Fusion 360, Siemens NX, Catia, Ansys, SimScale (CFD/FEA), KiCad.

Programming & Systems: Python, C++, ROS2, Embedded Systems (STM32/ESP32), Linux, UART, SPI, I2C.

Robotics & Control: PX4, ArduPilot, PID Tuning, Sensor Fusion, SLAM, LiDAR Integration.

Manufacturing: 3D Printing (SLA/FDM/SLS), CNC Mill Machining, Waterjet Cutting, CNC Laser Cutting, Quality Control (SOP/QC), DFM/DFA, Soldering (Hand/Reflow).