Yaseen Ammanudin Primus

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EDUCATION

University of Illinois Urbana-Champaign *Champaign, IL*
B.S. Aerospace Engineering, Grainger College of Engineering GPA: 3.86 / 4.00
Honors: Dean's List, James Scholar Award, Engineering Tutor, Minorities in Engineering Mentor
Relevant Coursework: Statics & Dynamics, Solid Mechanics, Materials Science, Calculus III, Linear Algebra, Differential Equations

ROBOTICS & ENGINEERING EXPERIENCE

Mechanical Engineer — Humanoid End Effector Team *Aug. 2025 – Present*
SIGRobotics, University of Illinois Urbana-Champaign *Champaign, IL*

- Designed a rack-and-pinion clamping end effector in OnShape for a Booster humanoid robot, modeling the gear train, opposing jaws, base, and a custom wrist-mounting interface for a university-wide robotics competition
- Drove print-to-print DFM iteration across multiple PLA prototypes, tweaking screw-hole tolerances, part clearances, and print orientation until the assembly was reliable and competition-ready
- Integrated and tuned a Dynamixel servo via Dynamixel Wizard to actuate the clamp, programming grasp, hold-under-load, and release sequences for a repeatable water-bottle pick-and-place task
- Currently designing a 5-finger, fully tendon-driven underactuated hand targeting 20 of the 30 GRASP taxonomy grips, balancing dexterity against part count and printability

Mechanical Engineer & Systems Logistics Lead *Jun. 2025 – Present*
VARCO — Vacuum Plasma Spraying of Regolith-Ceramic Composites *Chicago, IL*

- Won 1st of 48 teams in the NASA L'SPACE NPWEE national competition, securing $10,000 to execute a 12-month build plan for a lunar-regolith thermal-spray coating that protects surface machinery
- Authored 11+ standard operating procedures (SOPs) for the materials test campaign, including thermal cycling, adhesion (ASTM tape), hardness, thermal-conductivity, and cryogenic-exposure testing
- Sourced and spec'd external test facilities and vendors, comparing thermal-vacuum chamber capabilities and rewriting procedures to secure additional funding and production-grade testing
- Ran experimental testing on 125+ coated aluminum coupons, data logging, and statistical comparison to turn raw data into coating-performance insights

Autonomy & Simulation Contributor *Jan. 2026 – May. 2026*
Illinois Robotics in Space (IRIS) *Champaign, IL*

- Built a URDF model from a full CAD robot, defining link-joint hierarchies, frames, and inertial properties for simulation and controls, ensuring geometric consistency between CAD and sim
- Collaborated cross-functionally with mechanical, electrical, and autonomy sub-teams to reconcile hardware constraints with software and simulation requirements

Internal Consultant Intern *Summer 2025 + Summer 2026*
CME Group (Chicago Mercantile Exchange) *Chicago, IL*

- Led a process-optimization initiative to cut time-to-market, running 100+ stakeholder interviews to map the idea-to-development workflow and pinpoint bottlenecks between management and engineering teams
- Formed and validated bottleneck hypotheses through interviews and tooling analysis, then proposed workflow changes projected to reduce hand-off delays dramatically
- Scaled an internal GenAI platform from 200 to 4,000 daily users by building usage dashboards and onboarding playbooks, demonstrating rapid iteration and adoption in a fast-moving environment

ADDITIONAL EXPERIENCE

Mechanical Team — RASC-AL *Jan. 2025 – May 2025*
Illinois Space Society *Champaign, IL*

- Created 10+ CAD models of payload-transport pallets and co-authored a 60+ page technical proposal to NASA covering rover transport logistics and mechanical design of two 5,590 kg-capacity forklift rovers

SKILLS & INTERESTS

CAD & Design: OnShape, Fusion 360, URDF, DFM/DFA, tolerance analysis
Prototyping & Manufacturing: FDM 3D printing (PLA), rapid iteration, jig/fixture design, SOP authoring, Dynamixel servo integration
Technical: Python, HTML/JavaScript, data logging, process mapping, Microsoft & Google Suite
Languages: English (Native), Arabic (Native), French (Basic)