German Markaryan

Santa Clara, CA | 971-380-7537 | germanmarkaryan@icloud.com | linkedin.com/in/germanmarkaryan | germanmarkaryan.com

PROFESSIONAL SUMMARY

Mechanical engineer who takes hardware from initial concept through high-volume production. Delivered full-lifecycle systems across consumer electronics, solar energy, industrial equipment, and autonomous robotics, cutting cost 95%, slashing process time 87%, and lifting performance 20%+. Fluent in SolidWorks and Siemens NX, DFM/DFA, and hands-on build-test-iterate cycles. Owns the whole product and sees it through to manufacturing release.

EDUCATION

Santa Clara University Santa Clara, CA

Bachelor of Science in Mechanical Engineering Graduated: June 2026

- Team Lead, 6-engineer Senior Capstone (ATLAS Solar Tracking Platform)
- Relevant Coursework: Abaqus Scripted FEA, Finite Element Theory, Smart Product Design, Engineering Data Science

TECHNICAL SKILLS

CAD & Design: Siemens NX, SolidWorks, Onshape, Shapr3D; GD&T, DFM/DFA, tolerance stack analysis, BOM

Hardware & Manufacturing: CNC machining (lathe/mill), FDM 3D printing (DfAM), laser cutting, MMA adhesive bonding, sensor integration, oscilloscope debugging, system integration & test

Electronics & Firmware: C++/Arduino, ESP32, BLE, I2C, embedded sensor systems

Analysis & FEA: ANSYS Mechanical 2024 (nonlinear static, bolt preload, frictional contact), Abaqus/CAE (Python scripted)

Computing: Python (NumPy, Pandas), MATLAB, Simulink

Certifications: MathWorks Simulink Fundamentals (100%), MathWorks Simscape Onramp (100%)

PROFESSIONAL EXPERIENCE

Hyster-Yale Group – Mechanical Engineering Intern Fairview, OR

Counter Balance Development Center, Global Modeling & Simulation April 2024 – Sept 2024

- Owned a fatigue-machine safety enclosure end to end (design, BOM, fabrication, on-site install), cutting cost 95% ($850 vs. $17,646 OEM quote, ~$16,800 saved) while quadrupling impact strength in a custom polycarbonate / 8020-aluminum build in Siemens NX.
- Identified weld FEA as the bottleneck slowing chassis validation, then built and owned a reusable ANSYS weld-generation workflow, cutting preprocessing 87% (22 min to under 3 min) and a 150+ weld chassis from ~2 weeks to ~3 days. Later adopted across U.S. and international teams.
- Caught a fatigue-failure risk on the C23 and P12 wheel-force-transducer adapters before release, ran nonlinear static FEA with bolt preloads and frictional contacts across design iterations, and drove the part until it cleared the endurance limit with margin (312 MPa von Mises).

Skycart – Mechanical Engineering Intern Livermore, CA

Autonomous UAV Delivery, Mechanical Design & Integration Mar 2026 – Jun 2026

- Eliminated the delivery rack's dependence on software sync by extending four linear actuators 95% (117 mm to 229 mm) and coupling each pair with a connecting rod, guaranteeing mechanical alignment as payload weight shifts in flight.
- Designed a fail-secure carbon-fiber side rail driven by a servo through a 10-tooth pinion and gear rack, using back-drive resistance to hold the package under load with zero power.
- Took the rail from prototype to manufacturing release: 2 production-ready CAD assemblies, 7 fully toleranced dimensions, and a carbon-fiber laser-cut / MMA-bond process plan designed for high-volume production ramp.

PROJECTS & LEADERSHIP

ATLAS: Automated Tracking Light Acquisition System – Senior Capstone, Team Lead September 2025 – June 2026

- Designed a dual-LDR solar tracking sensor module from scratch: modeled directional shading geometry to detect sun misalignment between 10 and 20 degrees, validated optical performance via CAD simulation, and waterproofed the PLA/acrylic enclosure through a 50-cycle spray test with zero detected leakage.
- As Team Lead of a 6-engineer team, coordinated subsystem integration across the full ATLAS platform and personally owned the 4-linear actuator rotation frame, delivering a field-validated roof-mounted solar tracker targeting 20%+ energy gain at ~$594 unit cost.

GWatch Custom Smartwatch – Solo Hardware / Firmware / Enclosure 2026

- Designed and shipped a consumer wearable across 4 generations, shrinking the enclosure 18% (20 to 16.4 mm) across a multi-part assembly held to 0.2 mm FDM tolerances by reverse-engineering Apple Watch lug geometry.