Aaron Joshua S. Tolentino

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SUMMARY

Engineered a robotic system that doubled run time and lowered thermal load by 20%, showcasing strong skills in efficiency and design optimization. UCLA Mechanical Engineering graduate with expertise in CAD, rapid prototyping, and research-driven problem solving, ready to apply innovative solutions to complex engineering challenges.

EDUCATION

Bachelor of Science in Mechanical Engineering

University of California, Los Angeles · Los Angeles, CA · 2025

SKILLS

· **CAD & Prototyping:** SolidWorks, AutoCAD, 3D printing, rapid prototyping, iterative design
· **Mechanical Systems:** Thermodynamics, heat transfer, materials science, structural analysis
· **Modeling & Analysis:** MATLAB, Python (simulation, data analysis), LabVIEW, experimental design
· **Optimization:** Component redesign, airflow dynamics, thermal management, efficiency improvements
· **Collaboration & Communication:** Cross-disciplinary teamwork, technical documentation, presenting complex ideas clearly
· **Problem-Solving & Innovation:** Research-driven design, creative iteration, adaptability in fast-paced environments

EXPERIENCE

Administrative Assistant and Engineer Intern

WZI.inc   **June 2022 – October 2023, Bakersfield, CA**
· Developed a systematic methodology to analyze 2,000+ well diagrams and data sheets, reducing processing time for professional evaluations by 40% and improving workflow efficiency.
· Coordinated transfer of technical soil data with partner laboratories, ensuring accuracy and compliance with digital data handling standards.
· Supported oil well projects by facilitating technical consultations between 3 Project Managers and specialty engineers, enabling timely and informed decision-making.
· Supported project managers with administrative tasks including meeting coordination, filing, and technical correspondence, improving overall workflow efficiency.

INVOLVEMENT

Technical Coordinator

University of California, Los Angeles · Samahang Filipino Culture Club · June 2024 – May 2025
· Led a 20+ member technical sub-team in planning, designing, and constructing large-scale theater sets, while managing a crew of stage ninjas to coordinate set transport during scene changes for a performance attended by ~2,000 audience members.
· Acted as liaison between professional theater staff, sub-team members, and coordinators, aligning design requirements and execution schedules to cut project timelines by 50% and save several hundred dollars in material costs.
· Engineered three 10 ft periaktoi with roll-down painted panels, modular dismantling for transport, and wheel-mounted bases for easy mobility, meeting structural stability and rapid scene-change requirements.

PROJECT

Ceiling Climbing Robot

University of California, Los Angeles · January 2025 – June 2025
· Engineered a prototype robotic system with ducted fan, sensor suite, and Arduino-based control, demonstrating obstacle avoidance and mobility across walls and ceilings beyond standard ground-based Roomba designs.
· Designed and assembled mechanical housings in SOLIDWORKS, completing 4 design iterations for enclosure and 10 iterations for propeller geometry, reducing prototyping cycle time and improving manufacturability.
· Achieved a 20% reduction in motor temperature and 50% longer runtime by analyzing structural stability and heat distribution via FEA and infrared thermography.
· Performed experimental validation of clearance-to-throttle tradeoffs using real-time 3-axis vibration data, identifying optimal clearance range with 10% stabilization margin at a 1 kg payload.

Targeted Drug Delivery Proposal for Ataxia-Telangiectasia (A-T)

University of California, Los Angeles · March 2025 – June 2025
· Formulated an innovative drug delivery proposal employing lipid nanoparticles for targeted brain therapy in ataxia-telangiectasia, integrating interdisciplinary research insights to optimize safety and therapeutic outcomes through lipid nanoparticles and antisense oligonucleotides.
· Conducted in-depth analysis of existing A–T studies and experimental drug delivery techniques to propose a system projected to be 10% safer and reduce mortality by over 20% compared to existing approaches.
· Modeled 5+ nanoparticle release profiles using differential equations, optimizing parameters to improve predicted brain-targeting efficiency by ~25% compared to baseline models.