


Mohammed Kaif Khan

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EDUCATION

B. Tech, Mechanical Engineering **8.31 CGPA** Graduating May 2027
Minor Degree, AI for Signal Processing Applications
National Institute of Technology, Tadepalligudem, Andhra Pradesh.

Relevant Coursework : Corporate Communication, Industrial Robotics, IC Engines, Production Processes & Management, Industrial Engineering

WORK EXPERIENCE

- **Manufacturing an EV Go-Kart** Sept 2025
 - Designed and fabricated a full electric go-kart chassis from AISI 1018 steel, performing structural FEA, steering geometry integration, battery/motor packaging, and drivetrain alignment to meet high-speed stability and endurance requirements.
 - Integrated a QS 138 90H V1 BLDC motor powered by a 72 V, 40 Ah dual lithium-ion battery pack, achieving **90+ km/h top speed**, optimized torque delivery, thermal control strategies, and balanced mass distribution.
- **Executive Member – Technical Team, Techkriya (Annual Technical Fest, NIT Andhra Pradesh)** Oct 2024
 - Assisted in organizing and managing event logistics, including room allocations and coordination, while gaining hands-on experience in team collaboration and on-the-spot problem-solving during live events.

PROJECTS

- **Steering Head, Go-Kart Team 'Ev-il Syndicate' – NIT Andhra Pradesh** June 2025
 - Developed a fully parametric 3D CAD model of a go-kart steering assembly in SolidWorks, including tie-rod geometry, kingpin axis alignment, and steering column packaging for manufacturing feasibility.
 - Optimized steering kinematics by configuring a negative Ackermann linkage, incorporating **1.5° negative camber**, **1° toe-out**, and **10° negative caster**, achieving improved lateral weight transfer characteristics, reduced scrub radius effects, and enhanced corner-entry responsiveness.
 - Validated the dynamic behavior of the system through kinematic and motion studies, demonstrating self-centering capability driven by negative caster geometry and improved turn-in efficiency due to controlled toe-out settings.
- **Gestures to Movements: Crafting a Robotic Arm Using OpenCV** Oct 2024
Team Project | AI & Robotics Club - NIT AP
 - Engineered a real-time vision-based control system using OpenCV and MediaPipe, extracting and classifying hand landmark data to enable robust gesture recognition for intuitive human-machine interaction.
 - Mapped recognized gestures to robotic arm motion via Arduino Nano, integrating servo-actuator control and serial communication to achieve smooth, responsive, real-time robotic manipulation.
- **3D Printed Prototype of Height-Adjustable Conveyor Belt - Minor Project** Jan 2025 – April 2025
 - Designed and built a working prototype of a height-adjustable conveyor belt using 3D printing, integrating Arduino R3 and L298N motor driver to control an N20 motor for vertical motion.

TECHNICAL SKILLS

- **Modeling and Simulation:** SOLIDWORKS(Advanced), AutoCAD, Ansys(Moderate), Calculix using FREECAD
- **Programming & Tools:** Python, MATLAB Simulink, C++, Arduino IDE

Achievements

- **Secured AIR 7 in the Overall EV Category at FKDC Season 9**, organized by FMAE, highlighting strong engineering design, team coordination, and competitive performance in electric vehicle development.