

Mark Jennings

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Work Experience	Education	
<p>Los Alamos National Laboratory <i>R&D Engineer Oct. 2021 – Present</i></p> <ul style="list-style-type: none">Overhauled nuclear glovebox with the first autonomous robotic arm in US plutonium part productionDeveloped control software, operating procedures, and tooling for robotic arm, hydraulic punch, and multiple laser marking systemsCoordinated intern program and advised technical projectsHeld DOE Q security clearance	<p>MS Mechanical Engineering <i>UT Austin Aug. 2019 – Aug. 2021 3.96 GPA</i></p> <ul style="list-style-type: none">Robotics courses in ME, CS, & AerospaceResearch thesis: <i>Manipulator Control in Collaborative Assembly</i> <p>BS Mechanical Engineering <i>UT Austin Aug. 2015 – May 2019 3.84 GPA</i></p>	
<p>Nuclear and Applied Robotics Group at UT Austin <i>Graduate Research Assistant Aug. 2019 – Aug. 2021</i></p> <ul style="list-style-type: none">Developed a C++ package to augment assembly tasks with a collaborative robot, reducing reported worker physical effort by up to 57%Refactored custom codebase to leverage open-source libraries for a more robust robotic research platform	<th>Skills</th>	Skills
<p>Sandia National Laboratory <i>R&D Intern June 2019 – Aug. 2019</i></p> <ul style="list-style-type: none">Designed additively manufactured metal components and developed corresponding qualification standardsLed 1st place intern team in design competition	<p>Software:</p> <ul style="list-style-type: none">Languages: C/C++, Python, JavaControls: MATLAB, LabView, SimulinkRobotics: Git, ROS, MoveIt, Linux <p>Mechanical:</p> <ul style="list-style-type: none">CAD (SolidWorks & Creo), FEA, DFMAMachining, Additive Manufacturing <p>Algorithms:</p> <ul style="list-style-type: none">Mobile robot navigation and localization (SLAM, Kalman/particle filters, A*)Redundant manipulator control (Jacobian inverse, human-robot control)Vision and calibration algorithms (Point cloud registration, ICP, Hand-Eye)	
<p>Apptronik <i>Mechanical Engineering Intern May 2018 – August 2018</i></p> <ul style="list-style-type: none">Derived forward kinematic equations for an advanced humanoid bipedal robotUpdated actuator testbed product to achieve higher payloads with lower fabrication costsTested firmware on spring-damper classification system and tuned MATLAB model to derive material parameters	<th>Outreach</th>	Outreach
<p>ReNeu Robotics Lab at UT Austin <i>Undergraduate Research Assistant May 2016 – May 2019</i></p> <ul style="list-style-type: none">Designed components and actuators for rehabilitation exoskeleton robotsMachined metal parts with both manual and CNC machines3D-printed custom hand and finger prosthetics	<p>Los Alamos FIRST Tech Challenge <i>Mentor/Coach Sept. 2022 – Present</i></p> <ul style="list-style-type: none">Taught ~12 middle schoolers STEM, problem-solving, and teamwork <p>UT Robotics & Automation Society <i>Mentor/Officer Aug. 2015 – May 2019</i></p> <ul style="list-style-type: none">Mentored first-year competition teams and led just-for-fun robotics committee	