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| Mark Jennings  *Applied Roboticist* |[*markjennings97@gmail.com*](mailto:markjennings97@gmail.com)|[*https://makr.org*](https://makr.org) | |
| Work Experience | Education |
| Los Alamos National Laboratory  *R&D Engineer* | *Oct. 2021 – Present*   * Overhauled nuclear glovebox with the first autonomous robotic arm in US plutonium part production * Developed control software, operating procedures, and tooling for robotic arm, hydraulic punch, and multiple laser marking systems * Coordinated intern program and advised technical projects * Held DOE Q security clearance   Nuclear and Applied Robotics Group at UT Austin  *Graduate Research Assistant* | *Aug. 2019 – Aug. 2021*   * 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   Sandia National Laboratory  *R&D Intern* | *June 2019 – Aug. 2019*   * Designed additively manufactured metal components and developed corresponding qualification standards * Led 1st place intern team in design competition   Apptronik  *Mechanical Engineering Intern* | *May 2018 – August 2018*   * Derived forward kinematic equations for an advanced humanoid bipedal robot * Updated actuator testbed product to achieve higher payloads with lower fabrication costs * Tested firmware on spring-damper classification system and tuned MATLAB model to derive material parameters   ReNeu Robotics Lab at UT Austin  *Undergraduate Research Assistant* | *May 2016 – May 2019*   * Designed components and actuators for rehabilitation exoskeleton robots * Machined metal parts with both manual and CNC machines * 3D-printed custom hand and finger prosthetics | MS Mechanical Engineering  *UT Austin* | *Aug. 2019 – Aug. 2021* | *3.96 GPA*   * Robotics courses in ME, CS, & Aerospace * Research thesis: [*Manipulator Control in Collaborative Assembly*](https://repositories.lib.utexas.edu/items/614cb1ec-43f3-47a6-9c7c-b3a444cdceea)   BS Mechanical Engineering  *UT Austin* | *Aug. 2015 – May 2019* | *3.84 GPA* |
| Skills |
| Software:   * Languages: C/C++, Python, Java * Controls: MATLAB, LabView, Simulink * Other tools: Git, ROS, MoveIt, Linux OS   Mechanical:   * CAD (SolidWorks & Creo), FEA, DFMA * Machining, Additive Manufacturing   Algorithms:   * 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) |
| Outreach |
| Los Alamos FIRST Tech Challenge  *Mentor/Coach* | *Sept. 2022 – Present*   * Taught ~12 middle schoolers STEM, problem-solving, and teamwork   UT Robotics & Automation Society  *Mentor/Officer* | *Aug. 2015 – May 2019*   * Mentored first-year competition teams and led just-for-fun robotics committee |