# McKinley Blandford

📞 xxx-xxx-xxxx  ✉ xxxxxx@gmail.com  🌐 kinblandford.com  in mckinley-blandford  ⌂ Nawper02

## EDUCATION

**University of Utah - College of Engineering**  Aug 2021 — May 2025
*Bachelor of Science in Mechanical Engineering*  *GPA: 4.0/4.0*
**Coursework: Mechanical Design, Dynamics, Numerical Methods, Materials Science, Electrical Engineering**

## SKILLS

**CAD**: SOLIDWORKS (CSWA Certified), Autodesk Fusion 360
**Programming**: Python, C, Matlab
**Fabrication**: Metalworking, Welding, Woodworking, 3D Printing

## EXPERIENCE

**Utah Wearable Robotics Laboratory**  May 2023 — Aug 2023
*Robotics Researcher*  *SLC, UT*

- Worked on a robotic neck exoskeleton that assists individuals with limited control of their neck
- Developed a Python-based control software for Linux-based single board computers to control the neck exoskeleton using eye-tracking
- Implemented inverse kinematics in order to accurately control the neck exoskeleton inside of its workspace
- Designed a GUI for real-time modification of control modes, filtering algorithms, and visualization of 3d exoskeleton simulation
- My system was able to align the orientation of a users head with their gaze

**University of Utah Department of Mathematics**  Jan 2022 — June 2022
*Assistant Undergrad Researcher*  *SLC, UT*

- Worked on the mathematical modeling of arctic sea ice
- Developed a GUI-based microporous medium generation and analysis software
- Features include: reconstructing X-ray tomography images into 3D pore structures, generating artificial pore structures using perlin noise, and performing automated analysis on these pore structures

## PROJECTS

**Automated Robotic Ping-Pong Ball Launcher**  Jan 2022 — May 2022

- Programmed a robot in Arduino C to automatically launch ping pong balls into targets as fast as possible
- Strategies for speed: performing computations during travel time, launching the ball while the robot was still approaching the target, and timing the reloading mechanism so that the robot did not have to stop moving while it was reloaded
- Won first place in a competition against 70 teams

**Double Acting Piston Pump**  Aug 2021 — Dec 2021

- Lead a team to design and prototype a novel type of water pump
- Our design used a piston, four check valves, and a slider-crank mechanism
- The novelty of our design is that it was able to pump water on both the forward and backward stroke of the slider-crank mechanism

**Desktop RPN Calculator** | *https://www.kinblandford.com/home/blang*  Sept 2022 — June 2023

- Created a GUI-based scientific calculator program for desktop computers
- Operates with Reverse Polish Notation (RPN) instead of the typical infix notation
- Features include: all standard scientific calculator functions, function definition, numerical integration and differentiation, numerical root-finding, matrix operations, variable definitions, and a custom built-in functional programming language

**To see accompanying videos, please visit https://www.kinblandford.com/home/portfolio**

## AWARDS & HONORS

**Texas Instruments Scholarship Recipient**
*Texas Instruments*  *2023*

**Valedictorian**
*Highland High*  *2021*

**Sterling Scholar - Skilled and Technical**
*Deseret News*  *2021*