What to Expect

Tesla is on a path to build humanoid bi-pedal robots at scale to automate repetitive and boring tasks. As a member of the software team, you will design and implement reliable & efficient control code for bipedal locomotion, object manipulation and state estimation. You will work on improving the robot's behavior in the real world, and reflecting those capabilities in a simulation engine for fast iteration. The code you will write will at term run in thousands of humanoid robots in real world situations and will therefore be held to high quality standards.

What You'll Do

- Work on the architecture and controls for per-joint level systems in the TeslaBot where we need to develop smart control and estimation techniques to seamlessly switch between different control modes depending on the task.
- Develop control architectures beyond PID's where we design spring mass models and full state feedback control at a joint level.
- Develop thermal and state estimation models for torque limiting and safety.
- Torque and power arbitration between multiple joints which share a DC bus

What You'll Bring

- Physics Modeling Fundamentals
- Understanding of how motors / gears / linkages work
- Strong with C.
- Implemented on hardware