

Technological breakthroughs in the last decade have significantly altered the way we experience our everyday lives, from smart phones, smart TV's, and even IoT products like air conditioners. One aspect of our lives, though, that has not seen any improvements coming from technology for many decades-- toast. The goal of this project is to bring the breakfast experience to the 21st century. We will create a device that allows you to wake up to a perfect piece of personalized toast. Laser etching will be used to burn images, a schedule, an inspirational quote, or the day's headlines right onto a piece of bread. The device can be set to act like an alarm clock, waking you up to your perfect toast, or used throughout the day. The image to be printed could be a selfie that you upload, data from relevant news websites, or updates from your favorite social media site, allowing for an entirely customizable breakfast.

The device will feature a laser, an enclosure with controls, and a Raspberry Pi retrofitted onto an old 3D printer. Stepper motors will control the position of the laser along the toast, with the power of the laser modulated at each point to create different toasting patterns. Software will be developed to combine photos, Web-scraped text, and more into a grayscale image to be burned on the toast, and process this image for printing. This project will aim to recreate the toaster experience using an Arduino to control the knobs, dings, and doors that we've all grown to love.