BURN PROOF POPCORN

How to Realize
'THE PERFECT BAG'

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What is the perfect bag of popcorn? Most would say it is one that has most of the kernels popped, with no burnt kernels. Too much time and half the bag tastes like a burnt stick, never mind the fire alarm sounding. Too little time, only enough corn for one. The battle wages between us and the popcorn, and someday we will devise a plan to cook the perfect bag – Every Time.

All of us have a microwave, have neighbors who have one, or have seen one, and those made in the last fifteen years have a popcorn button on them. One might think – 'That will make the perfect bag, right?' Wrong!! It isn't as simple as the 'set it and forget' idea the name implies. Most of those settings will turn the microwave on for a set power and anywhere between 2.5 and 5 minutes, in hopes that this is the optimal time to pop a bag. I don't think it can be accomplished so simply.

While pondering at my desk one afternoon, eating burnt popcorn and cursing the heavens, an idea entered between my ears. It was a way to incorporate audio sensors, a bandpass filter, and programmed microprocessor with the microwave which would be able to detect when the bag is done popping, regardless of bag size or microwave power. The idea is simple: Observe the time interval between pops, not how much time has passed since beginning the process.

The first part of the process is to determine what sound frequencies are associated with a typical 'pop'. After experiments and research, this can be found and incorporated into a bandpass filter. Only those sounds produced from a 'pop' will be passed on to microprocessor. I am not sure, but microwaves may even have a microprocessor built in to their design, which I assume is the case.

The filter will have to be of a high order, so that only the small range of desired frequencies will be passed while neglecting all of the electrical noise produced by the microwave itself. The radiation emitted by the device may interfere with the sensor, but that can be determined in the lab. Past the filter, the program needs to be written. There would be an issue with the device to be able to differentiate between the beginning of the cycle and the end. To prevent this, the program will not begin until the relatively loud sounds of the majority of the popping starts. Then once it slows to a couple of seconds between pops, the power shuts down and all that is left is the "Beep….Beep….Beep" to tell the user the perfect bag has finally been found.

No more compulsively watching the spinning, popping, steaming bag through that thick, plastic, barely clear viewing window, while probably getting brain cancer. No more wasted kernels patiently waiting popping at the bottom of the bag only to be let down when they get thrown away. No more setting off the smoke detector and scaring the pets and children with a house full of smoke, all because you forgot to watch the popcorn. Most importantly, no more being let down by less than stellar popcorn.

Sources:

Salton,Inc.
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