(Updated Sept. 26th)

Thank you everyone for the huge response. Now I get to make an FAQ where the questions were **actually frequently asked.** I'm going to respond to every single email that had a question when I have time this weekend (update: Okay...that took forever. From now on, I'll respond to just the ones that really need responding to. I'll still try to respond to all, but it might not be prompt). I'm really impressed with everyone's ideas. Also, I realize some of these are not questions...I don't have anything else to say about that.

Q: Where did you learn how to do this?

A: It says on the front page where on the Internet. I recommend taking the Image Video Computing class at Boston University though too, or wherever you go to school.

Q: How much did it cost to make it? Can I have a parts list?

A: The turret cost about \$100 without the gun or camera. I got a really good deal on servos off of craigslist, and I used my uncle's power supply. That means it would probably cost you about \$150. The gun was another \$50. I used my old digital camera that was \$80 back in the day (2 years ago), but you could use a \$15 one from Fry's or somewhere. I think all of the parts are really listed in the How-To, but I suppose it wouldn't hurt...I'll put that on my todo list.

Q: Can I have the source code?

A: I would like to, but you probably wouldn't want it. The code is definitely not in any condition to release. I have plans to write a scientific paper on the project by the end of the semester. I will include all of the algorithms and everything you need to recreate the turret, but you'll want to do it yourself. The programming is not as difficult as you might expect, and there are sooooo many improvements to be made upon my code. So final answer...not right now. Also, it is maybe a LITTLE scary if everyone can have their own more-lethal version of the turret at home after downloading some software. I'll think more about this... I will be, however, releasing a scientific paper later this semester on how I made it. Your best bet will be to follow the algorithms in it.

Q: Can I buy your prototype?

A: It depends on who you are. I would like to keep it around for a while so I can get more work done on it. But, you, know, if you're offering 5 million dollars... Hopefully you'll be able to get your own soon.

Q: Can you send me schematics and plans?

A: I don't have anything that I wouldn't be embarassed to send. I seem to remember my little brother and I drawing the first plans on the back of a paper plate at the dinner table because we were too lazy to get printer paper.

Q: Will you be selling the plans?

A: I haven't used CAD since 8th grade, so I don't plan to in the near future. Really, I want to make it better

first.

Q: What else have you done on it? Is your multiple target tracking system working?

A: Okay, so here's the problem. I'm still trying to get clearance from Boston University to let me bring it to college. I took it apart and left it ready to ship so my family could send it, but Boston University has policies against having a sentry turret here. I'm sure most schools do, or if they don't, they'll make one. In any case, I brought a smaller version that just has a laser on it. So I'll be improving it soon.

Q: That's lame, it just tracks the brightest thing, this would be really useful against the white t-shirt soldiers.

A: No it doesn't. It uses differencing. It simply subtracts the background frame it has stored from the frame it's currently seeing and takes the absolute value. That means it will see any difference at all, not just white. As for camouflage, that might cause problems if some of the colored areas on the camouflage blend in with the background because it will break up the outline of the person (which is what it's supposed to do). There are a number of ways to remedy this problem, some of which are alternate-wavelength cameras, while others are algorithmic. As a side note, our shirts were beige, but I had my program add white to anything it thought was a target. You can see this on Ezra's pants.

Q: Do you need a job? I know a guy, who knows a guy...

A: Yes! I'm graduating in December and am interested in software engineering jobs. You can find my <u>resume</u> here. Contact me via <u>email</u> (and I'll get back to the people who already have...)

Q: I want to help you build a better one.

A: I really appreciate these emails. I would love to work with you, especially if you're an engineering company... I'm still finishing up school...but it would be fun to build a big one of these, right?

Q: I built a similar one.

A: I want to hear about it. I've already heard a couple good ones, nothing exactly like it though. I'll try to put up some links later.

Q: You should put up a PayPal donations button.

A: There will be a version Mark II! That means I'm now accepting donations. It's on the bottom of the main page. Thank you to everyone who said I should do this. Since I now have more of a plan, I can tell you, it will go to a Mark II. This will help so much, and thank you in advance. I not only need parts, but time to work on this.

Q: You should patent it.

A: I checked into it, looks like I have 12 months to file from a few weeks ago. I'll file a provisional soon...

Q: I have this idea, where there are lasers and sharks and stuff...

A: I would like to hear it. I've been really impressed with the ideas that have come through so far. (And to all the proponents of infrared...we actually hooked up a broken webcam minus an infrared filter and used a TV remote for illumination...getting a real setup requires real money though).

Q: When are the new videos coming?

FAQ

A: It's on the front page!

Q: Are you working with anyone so I can later get an updated version of the turret?

A: Yes, I'm in talks with a number of companies. I'm interested in hearing from more, but these guys sound really excited about it. That means we should eventually have a version for the consumer. I'm thinking Airsoft first, then paintball. I'm hoping we'll be able to keep it relatively cheap too.

Q: What if someone builds one from your plans with a real gun and hurts someone?

A: Please don't do that, it's not nice.

Q: Aaron and Ezra are awesome!

A: What can I say? I really like these emails too. Thanks (but we're really not THAT awesome, you know, not with an exclamation point and all...).

Q: Are you single?

A: Just kidding, nobody asked that.