

# The Mottier Innovation Challenge in Systems Engineering

Submission 4

## 1. Project Title

**Light Fashion**

## 2. Please list team members, denoting department and undergraduate/graduate student

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## 3. Please list contact information for the team (email, phone number)

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## 4. What are you trying to do? Articulate your objectives using absolutely no jargon.

**The dramatic shift in clothing consumption over the years driven by large corporations and the trend of fast fashion has cost the environment and millions of workers' health. Consequently, fashion has become one of the largest polluter in the world. By creating an app (currently called "Light Fashion") that will help reduce users' consumption of clothing and laundries, we can lessen the enormous carbon footprint. Light Fashion can save the environment, rejuvenate cotton farmers' health, eradicate most of questionable human labor practices, and reduce the use of carcinogenic pollutants by diminishing the public's willingness to buy garments.**

## 5. How is it done today, and what are the limits of current practice?

**Cotton plants require a huge quantity of water and pesticides. A cotton plant uses more insecticides and pesticides than any other crops in the world. These pollutants can be carcinogenic, harm the health of field workers, and damage surrounding ecosystems. Some clothing are made of organic cotton grown without pesticides and insecticides, but organic cotton makes up less than 1% of the 22.7 million metric tons of cotton produced worldwide. After manufactured in countries with cheap labor, all the garments travel by ship, train, and truck to be sold in high-income countries. This process gives cotton an enormous carbon footprint. Although some countries produce domestically, which cuts out this polluting stage, generally, apparel production still accounts for 10% of global carbon emissions. And, it's escalating. In a consumer's home, the attires go through one of the most resource-intensive phases of their lifetime. In America, the average household does nearly 400 loads of laundry per year each using about 40 gallons of water. Washing machines and dryers both use energy with dryers requiring five times more than washers. Many environmental friendly people wash clothes less and line dry to save resources. However, there aren't too many people.**

## 6. What's new in your approach and why do you think it will be successful?

**Light Fashion has many features to help reduce the consumption of clothing. Many people buy new clothes online or at a mall mainly because they think they don't have enough clothing. People ask themselves, "What should I wear tomorrow to school or work." On the other hand, when they don't have work, they ask themselves, "What should I wear this weekend to meet my friends" or "What clothes should I pack to visit a resort for a vacation." By then, a lot of people would go shopping, thinking they don't have the proper attire for the next day. Luckily, Light Fashion can arrange and plan our daily dressing. Simply, we take pictures of ourselves or just the clothes themselves and label them by their appropriate categories. (If there are more than one pieces of clothing in a picture, we can crop the picture and then label them individually). Then, we tell Light Fashion of the clothes we wear today. If**

we want to wear different clothes for the next day, Light Fashion will arrange the clothing for us. It will list the clothes we haven't worn the longest. From there it will give us the option to pick and choose for ourselves. If we're still unsure, we can ask Light Fashion to match pairs of clothing and limit down the options to just a few. This feature is currently called, "Dress me." In conclusion, this feature will make the most of the clothing we have in our closets. We won't have to think about buying new clothes as often. A lot of people throw the shirts and pants they've worn into the laundry basket without thinking how many times they've worn them, and many simply just forget. And, to address the issue of too much laundry, Light Fashion will reduce energy use and save water. The feature is called "Wash." It firstly asks the users for their preference on how often they want to wash their clothes. Then, it will keep track of the wear days of each clothing. For example, we could set 2 wear days for a black t-shirt. When we wear the t-shirt for 2 wear days, "Wash" will send a notification on our phones to wash our t-shirt. However, the notification will also suggest the users to wash it after one more wear day, because that's our recommended wear days. In conclusion, "Wash" won't have people struggle with laundry or waste water and energy, but benefit people and the environment. Note: There are more specific features within the "Dress me" and the "Wash" features. There are additional minor features we haven't mentioned. For example, "Wash" considers materials of the attires.

*7. Who cares? If you're successful, what difference will it make? What are the risks and the payoffs?*

We should take better care of the planet we live in. It's our responsibility to minimize our carbon footprint. If the "Light Fashion" team succeeds, everyone on this planet merits. And, there will be apparent difference. As mentioned before, Light Fashion can save the environment, rejuvenate cotton farmers' health, eradicate most of questionable human labor practices, and reduce the use of carcinogenic pollutants by diminishing the public's willingness to buy garments. There could be a drawback. Employees in the fashion and clothing company might be in risks of losing their jobs.

*8. How much will it cost? How long will it take? What are the midterm and final "exams" to check for success?*

The average U of I student android developers' hourly wages range from \$10 to \$12. Since Summer and I have taken CS125 (class about java) and both got A's in the class, we will code most of the infrastructure. We are planning to hire a student android developer for 20 hours to revise and enhance Light Fashion. Summer will do simple graphic designing, and we'll hire a U of I student graphic designer for 10 hours at a \$10 an hour rate. In total, we estimate the total cost to be around \$340. Our goal for the midterm is to have Light Fashion to fully function, but it won't have great user interface and design. To do so, we will beta test it with volunteers and listen to their feedbacks. Our goal for the final is to design a great user interface and make it more user friendly. Light Fashion will be available in the Google Play store.