Invent NI 2020 Application

**Startup Name:** ProductivityCam / PowerCam

**Category:**

**Summary:**

An innovative solution to expensive IP Cameras for factories by using iPhones to perform object detection, quality control and data analysis using ARKit, TensorFlow and Mechanical Turk to improve productivity and production rates.

**Opportunity/Problem Solved**:

In a study conducted by the analyst house ABI research in 2020, spending on factory data applications will grow from $18 billion in 2019 to just over $27 billion in 2024, a rise of approximately 50% in the period. They also said that ERP solutions, providing a single solution to monitor the production line will account for 50% of the spend. The amount of money being spent on these solutions currently are way too high and much more affordable solutions could be created that have much more functionality and potential, as well as being quicker to implement into the factory compared to expensive camera solutions. In a Forbes article from December 2019, it showed that manufacturers are only achieving 40% of their potential because they’re spending too much time on inventory control, production reporting, and pricing reports. With the system I’m creating, this data will be instantly created as items go through the production line, savings hundreds, if not thousands of hours.

**Your solution**

I intend to create the highest functionality, most affordable and easiest to install, data analysis and most innovative, object detection and quality control system using iPhone cameras with their technologies such as ARKit to detect objects and even factory workers to monitor productivity levels and production levels. With object detection, it could detect if any products fell off the production line, the speed the production line is going or the quality of the products that are going through the line to make sure they meet quality standards. TensorFlow could also be used to do object detection and use machine learning to learn things like the correct orientation of the products and how fast they’re going. Mechanical Turk would also be used to gather large data sets of products, for example checking if the spray on a tin / can is correct and readable. After creating the data set and creating a machine learning algorithm to automatically detect if the quality of products going through the system is sufficient / up to standards. By using TensorFlow, this means that the product could be expanded to use more than just iPhones such as Android phones if the client is looking for an even more affordable solution, without compromise. Using all of this data, I could create a web interface so they can access the view of each camera from anywhere in the factory or building the cameras are installed in. I could also create a number of different graphs and data presentation techniques to easily show the production rate and quality rate of the production line.

**Evidence**

*Not sure what to put here*

**Market Size**

Every factory that uses production lines and wants to improve their production levels, so every single factory.

**Competitive Advantage:**

*Not sure what to put here*

**References:**

<https://enterpriseiotinsights.com/20200121/channels/news/spending-on-factory-data-apps-to-rise-50pc-in-five-years>

<https://www.forbes.com/sites/louiscolumbus/2019/12/18/real-time-data-is-the-future-of-smart-manufacturing/#6f3970456ec0>