Case Study

Delivering an image recognition
solution for laser beam alignment
and power level monitoring system

BACKGROUND

When we as technology experts or domain experts, are a part of such a big eco-system, it becomes a bigger responsibility on us, as we don the hat of being tech nomads, tech evangelists, tech guides, tech keepers etc., to introduce technology for various purposes. The most dominant industry as of now capturing the tech is manufacturing. How efficiently tech is making this domain familiarized with new technologies or concepts is really a thing to witness. We have one of our well known client in the manufacturing industry, who were looking for an associate for their cutting edge tech product which is touted to be a game changer. The hybrid laser-diamond cutting tool system provides profitable solutions for machining hard and brittle materials. They were in need of a software, which could guide the machine operator for aligning the laser beam, with optimum image recognition, which would enhance the hi-tech precision cutting edge software, which is an important core of machinery process.
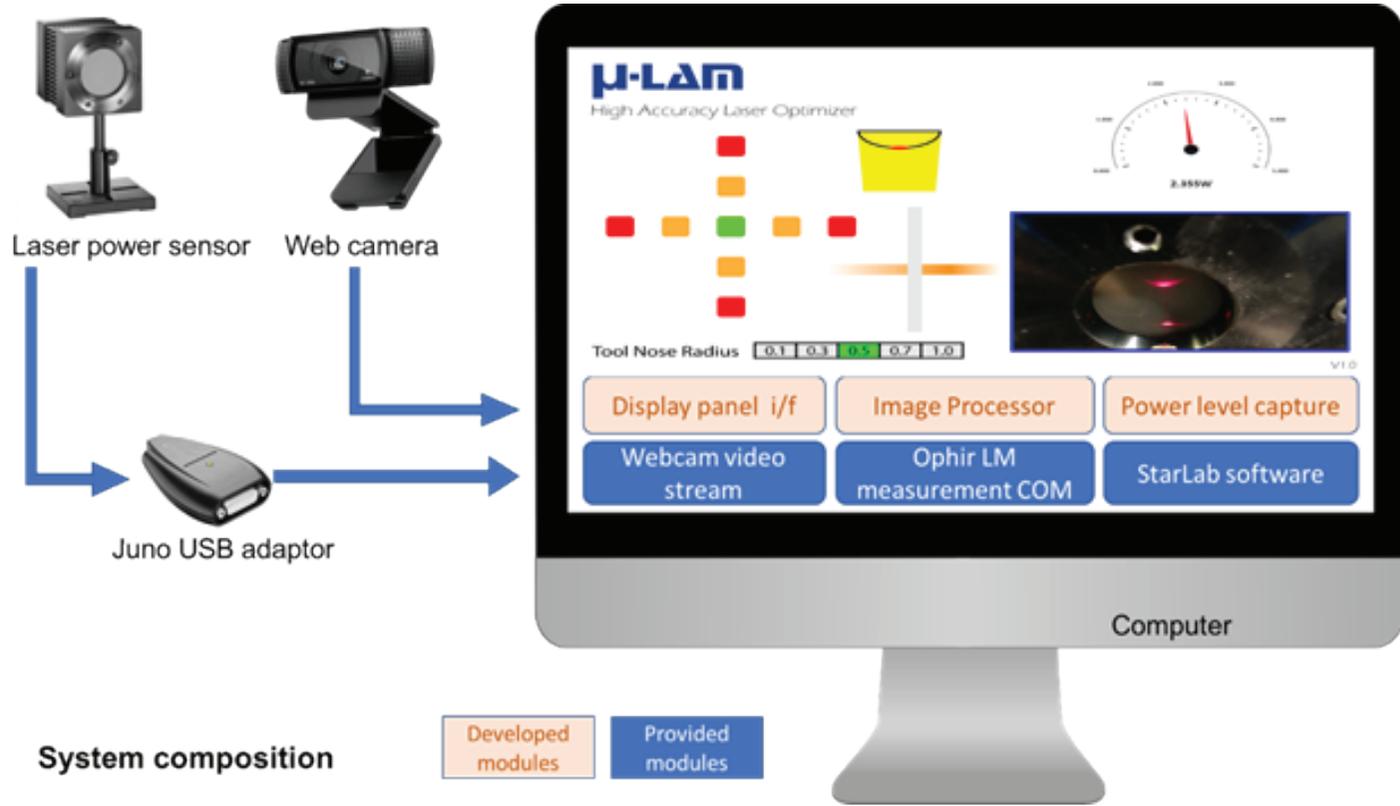
Mobinius™ Solution

Based on our client requirements, we helped them to develop image recognition algorithm's and data acquisition systems for their cutting-edge product, which in turn can be a trend setter in the market, in turn enhancing their brand recognition & value. Since, the laser technology demands proper cutting of the brittle / the softer materials, it becomes very crucial to have the laser beam software solution in place, to be precise enough for identifying the finer accuracy of the arc and its alignment.

Laser alignment requires high image recognition of the arc, so that the arc makes the right impact on the object. The impact on the object, with a proper sharp cut by the arc, can be seen perfectly on the display screen. We have built a graphical panel, which helped in the accurate positioning and detection of the laser beam arc, which is used to soften the brittle object. Along with this, the laser power was automatically read by integrating the transducers. Along with this, there was also a provision of a window panel which would display the webcam video. We also designed a power meter to gauge the laser beam power level along with some tools, which helped in gauging the accurate specific position, indicating the laser beam power level with an optimum position.

Thus, with the help of this high end image recognition system, it became much easier for the client to enhance the entire process of the laser beamed diamond cutting system, in turn handling the brittle materials with more ease and efficiency, cutting it with higher precision!

Laser power sensor

Web camera

Juno USB adaptor

μ-LAM
High Accuracy Laser Optimizer

2.355W

Tool Nose Radius 0.1 | 0.3 | 0.5 | 0.7 | 1.0

V1.0

| Display panel i/f | Image Processor | Power level capture |
| Webcam video stream | Ophir LM measurement COM | StarLab software |

Computer

System composition

| Developed modules | Provided modules |

TESTIMONIAL

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Enriching experience with Mobinius™

We chose Mobinius™ post the demo and, we were happy to see their POC which was acceptable by us, as it matched our parameters. Post this we decided to move ahead with the project. It is indeed a very good experience to work with the Mobinius™ Team.

Deepak Ravindran

CEO – Micro-Lam

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