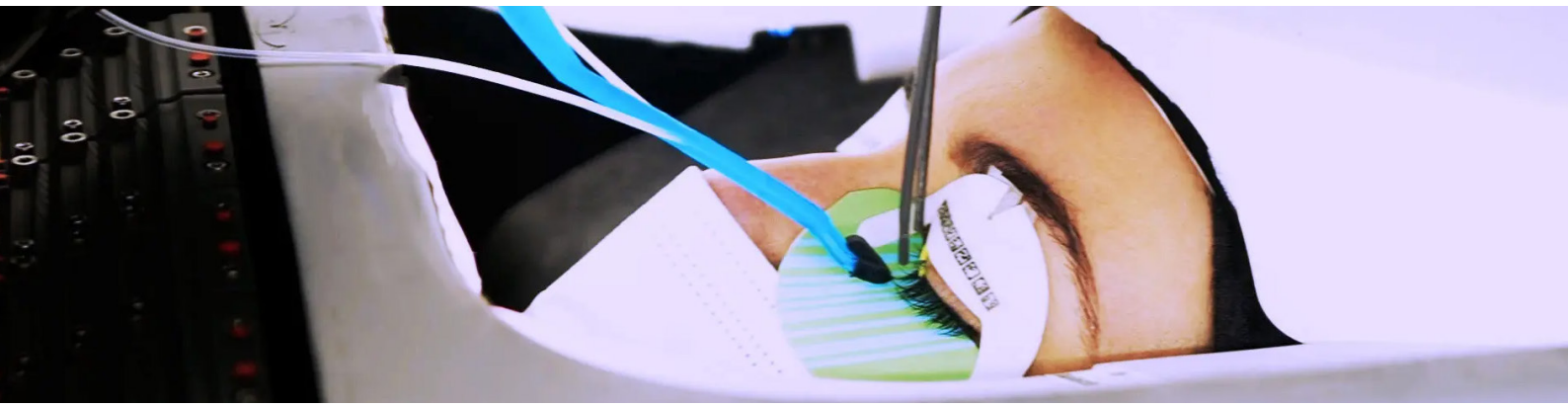
TripleRing

Precision Aesthetic Robotics

LUUM



Client
LUUM

Practice Areas
Advanced Imaging

Core Disciplines
Mechanical Engineering
Systems Engineering
Photonics & Imaging
Microfluidics

Challenge

LUUM needed a robotic system capable of performing highly precise cosmetic procedures in direct proximity to the human eye — requiring low-latency perception, real-time adaptive control, and reliable performance across a wide range of skin tones and eyelash characteristics. Safety, consistency, and user comfort were non-negotiable constraints throughout.

Solution

Triple Ring developed a machine vision subsystem capable of guiding robotic motion with high precision and real-time responsiveness. Optical engineering techniques supported accurate spatial tracking, while robotic control systems were designed for adaptive motion in response to natural client movement. Industrial design contributions addressed user comfort and usability, and full system-level integration unified imaging, robotics, and software into a cohesive platform.

Client Impact

- Delivered a fully integrated machine vision subsystem and industrial design framework for LUUM's robotic platform
- Enabled consistent, precise eyelash extension placement with high repeatability
- Maintained safety standards for procedures performed in close proximity to the human eye
- Supported reliable performance across diverse users, including varied skin tones and lash characteristics

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