Robot
By Alpro
MEET THE TEAM

Abby Wysopal
Kiet Nguyen
Michael Hau
Ryan Mitchell
Brent Luker

Alcon Mentors:
Burton Tripathi
David Chu

Joshua Magera
Marcellis Carr-Barfield
MOTIVATION

- Demand
- Volume
- Safety

Figure 1: Bourne et al.
GOALS

● Efficiency
● Accuracy
● Usability
Solution

- Surgical Webcam
- Overhead Webcam
- Surgical Video
- Overhead Video
- Face Landmark Coordinates
- Eye Coordinates
- API Call
- Patient Detection Model
- Robot Controller
- Robot API
- Eye Detection Model
EYE DETECTION DEMO
BUT WAIT... THERE’S MORE

FACE DETECTION

EYE DETECTION

ADDITIONAL FEATURES
LIVE DEMO

Robot
PATIENT RECOGNITION

Iris feature extraction

Encoding

Encryption

Daugman’s Algorithm:
- Iris Feature Extraction
- Encoding
**FINAL THOUGHTS**

**EFFICIENCY**
- Decreased setup time
- Higher volume of surgeries

**ACCURACY**
- Consistent and reliable image
- Multiple levels of fail safe

**USEABILITY**
- Clean dark mode design
- Very intuitive GUI
QUESTIONS?