IRIS
Bridging the Communication Gap
OUR TEAM

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By 2025, 36.2 million Americans will be working remotely.
Video conferencing services have seen a 10x increase in usage.
Autistic People Are Struggling

- sensory overload
- Autistic burnout
- detecting emotions, tone & sarcasm
85% of college educated Autistic adults are unemployed
There is an untapped potential that almost no one is paying attention to.
The relationship between quality of talent and business performance is dramatic.

<table>
<thead>
<tr>
<th>Job Complexity</th>
<th>Productivity Gap</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low complexity</td>
<td>50</td>
</tr>
<tr>
<td>Medium complexity</td>
<td>85</td>
</tr>
<tr>
<td>High complexity</td>
<td>125</td>
</tr>
<tr>
<td>Very high complexity</td>
<td>800</td>
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IRIS

Inclusive Video Calling for the Workplace
IRIS — a lightweight video call platform
### IRIS FEATURES

<table>
<thead>
<tr>
<th>Stressors</th>
<th>Solutions</th>
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<tbody>
<tr>
<td>Social Interactions</td>
<td>Sentiment Analysis</td>
</tr>
<tr>
<td>Sensory Overload</td>
<td>Customizable UI</td>
</tr>
<tr>
<td>Excessive Anxiety</td>
<td>Research Based Features</td>
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</table>

Meet Krishna

Has trouble navigating social interactions

Has a meeting with his manager, Alex
TECHNOLOGIES WE USED

JavaScript
Node.js
Express
mongoDB
WebRTC
HTML5
TECHNICAL CHALLENGES

1. Scaling Iris to 10k users, <1s inference
2. Autonomous self-tuning
3. Future work: openFER
TECHNICAL DETAILS: P2P Overview

Server-Based video calling

Peer-to-Peer video calling
TECHNICAL DETAILS: P2P at Scale

Server-Based video calling

Peer-to-Peer video calling
TECHNICAL DETAILS: Code Simplicity

code to integrate a model:

```javascript
onAddStream: async function (event) {

    setInterval(async () => {
        const video = document.getElementById('remote-video')
        const detection = await faceapi.detectSingleFace(video)
        const predicted_expression = Object.keys(detection['expressions'])
        document.getElementById('predicted-output').innerHTML += predicted_expression
    }, 300)

},
```

Lines of Code

![Bars chart showing lines of code for Capstone X, Capstone Y, and Iris (20-21)]
TECHNICAL DETAILS: Self-Tuning System
Future Work: openFER
MAKING THE WORKPLACE MORE INCLUSIVE
Thank you!

ANY QUESTIONS?
Recorded Demo

Future Work: openFER