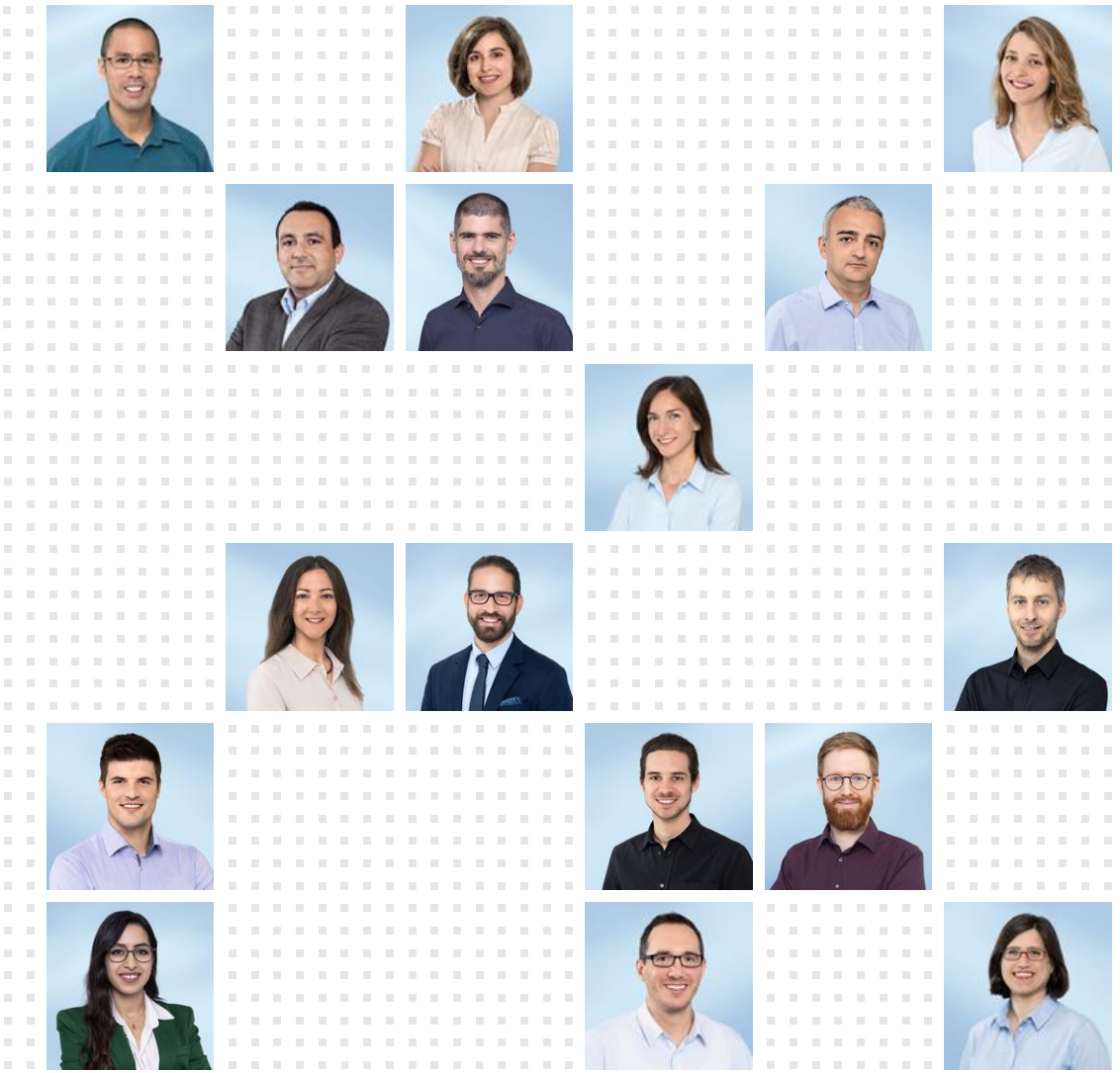
helbling

Striving for simplicity

Finding the sweet spot in medical device development

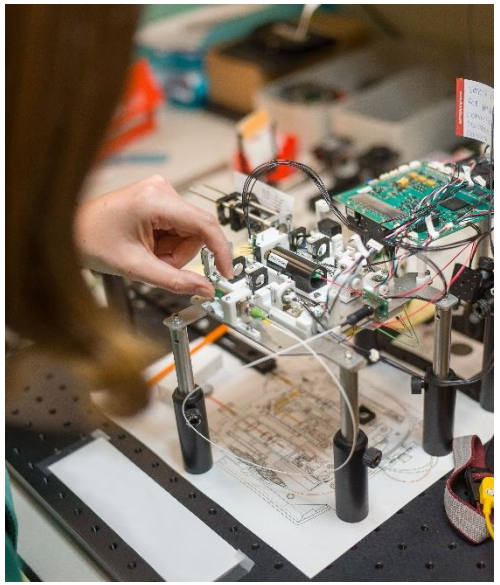
September 11, 2024
Stephan Wyder

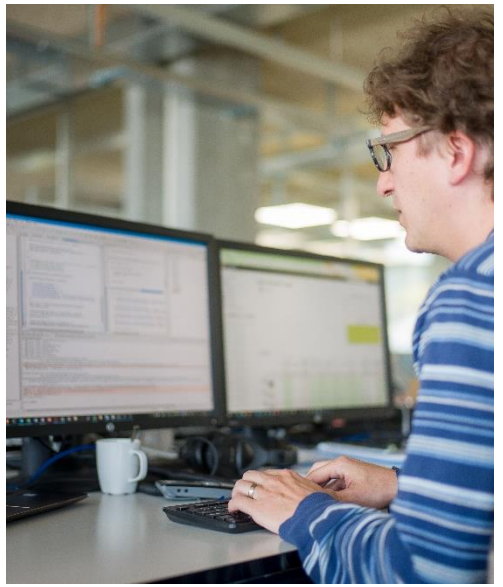
INTELLIGENT HEALTH 2024



Helbling -
a contract engineering company

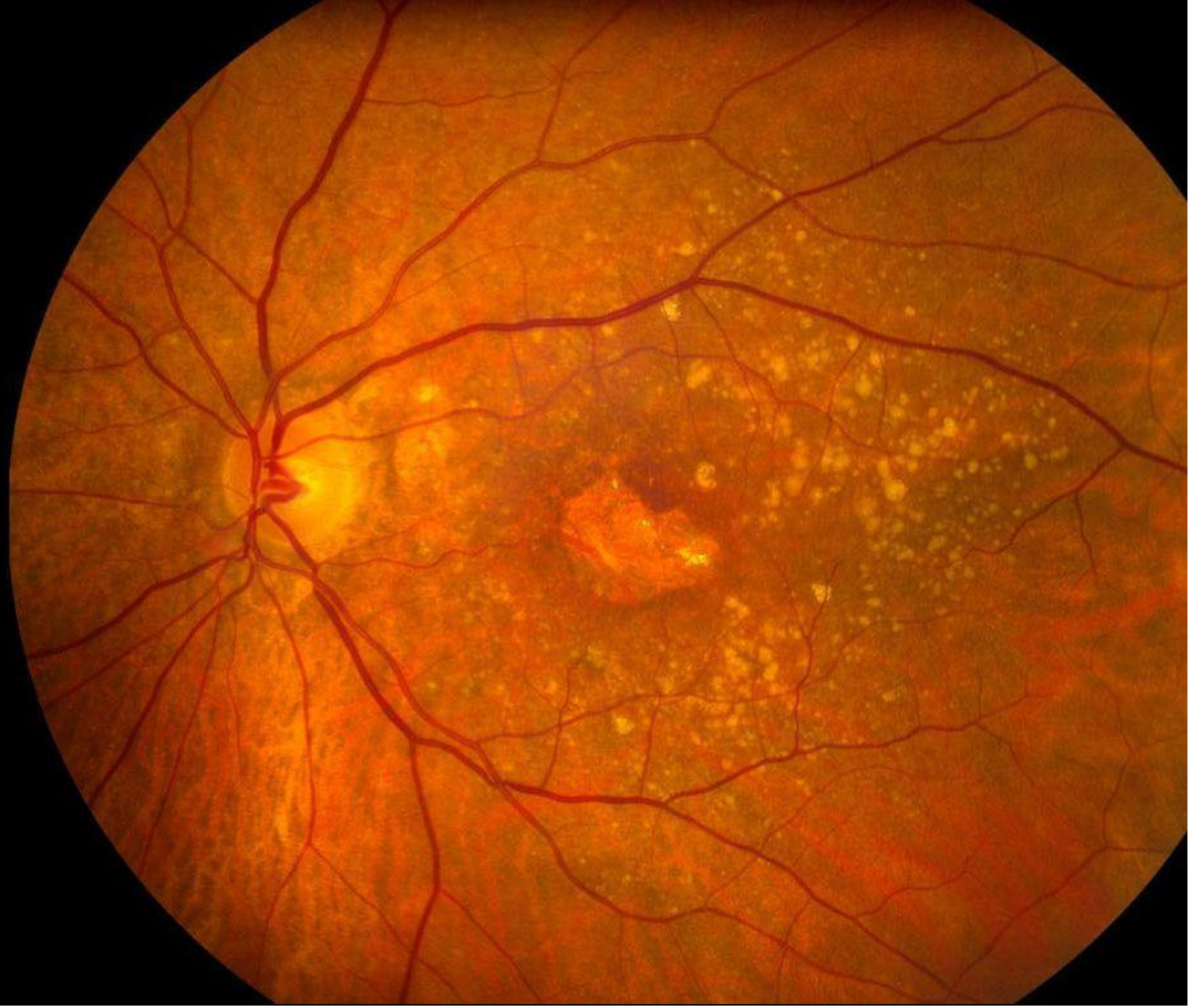
- Swiss-based
- internationally operating
- independent
- with over 550 engineers





A fight against vision loss caused by geographic atrophy

Apellis



Visual function assessment with a virtual reality headset

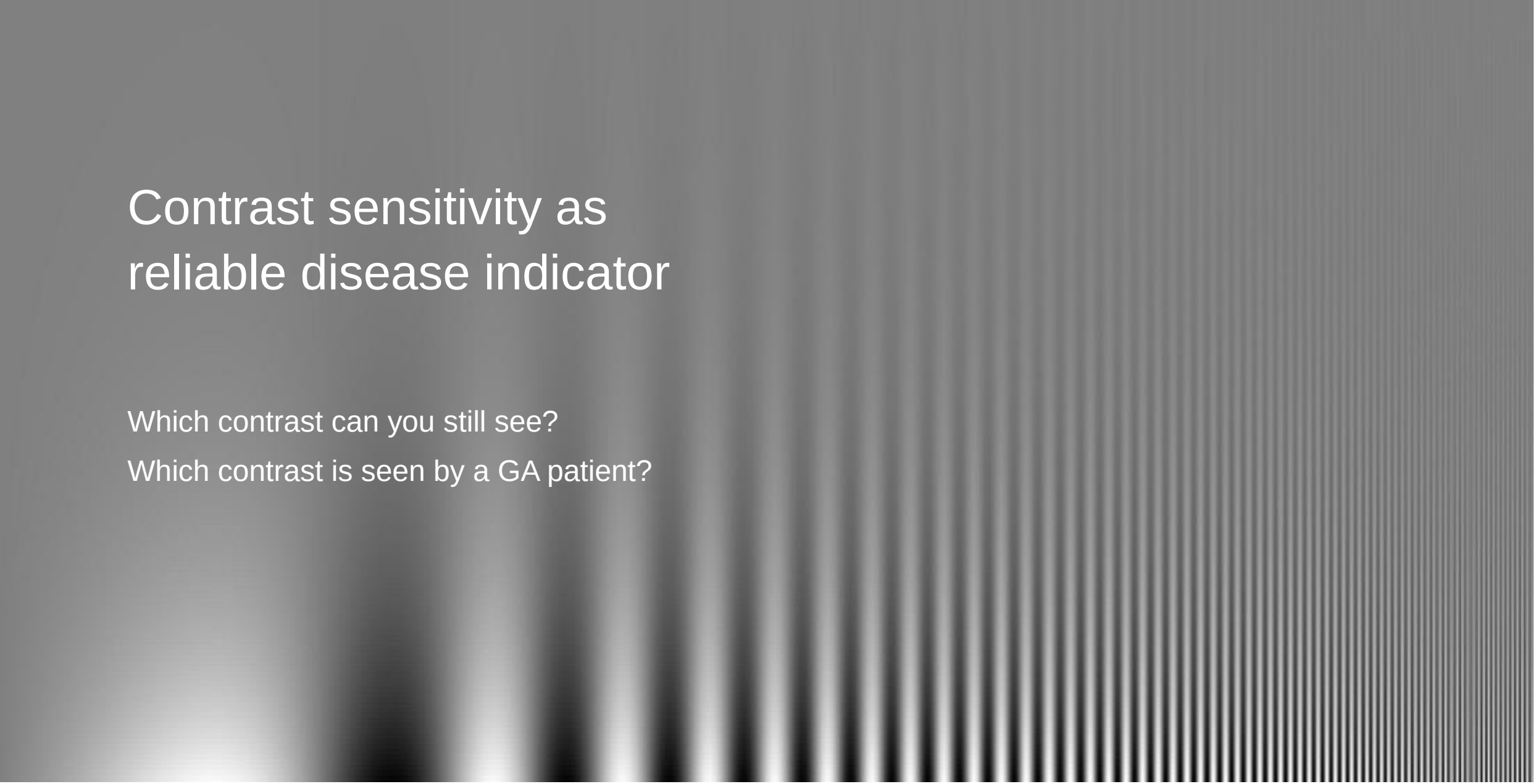
A lot of advantages – but –

- Limited optical quality
- Limited eye tracking quality

Contrast sensitivity as reliable disease indicator

Which contrast can you still see?

Which contrast is seen by a GA patient?

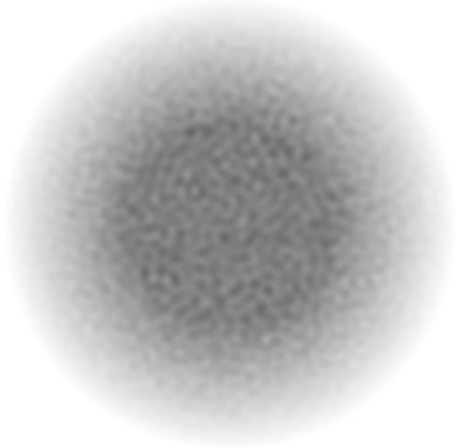


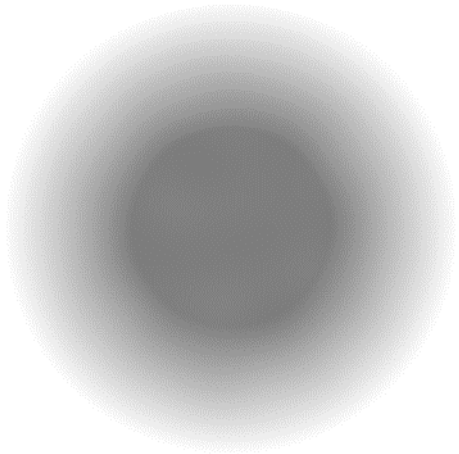
Visibility detection with rule-based algorithm

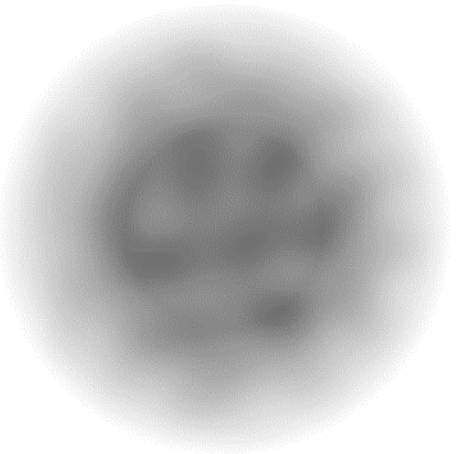
- Moving low contrast patches shown to a single eye of a patient
- Eye tracking technology to determine if a patient sees a patch or not

Visibility detection with rule-based algorithm

- Moving low contrast patches shown to a single eye of a patient
- Eye tracking technology to determine if a patient sees a patch or not

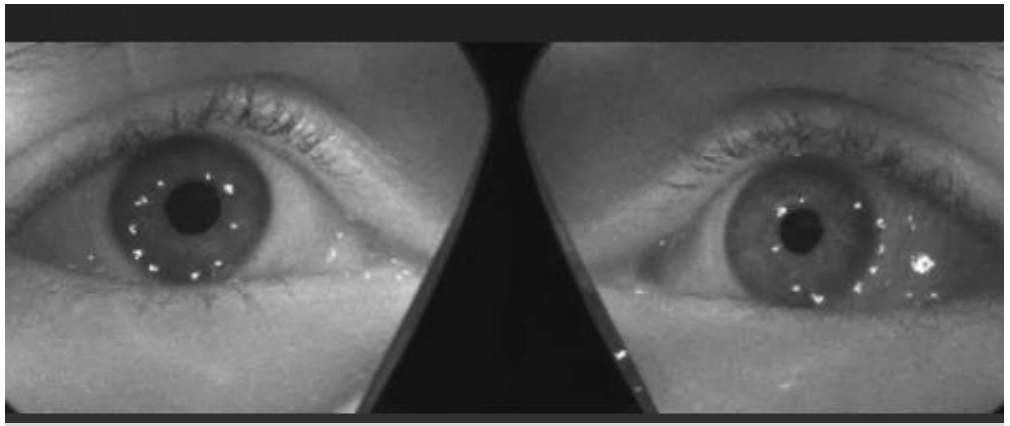






Visibility detection with rule-based algorithm

- Moving low contrast patches shown to a single eye of a patient
- Eye tracking technology to determine if a patient sees a patch or not



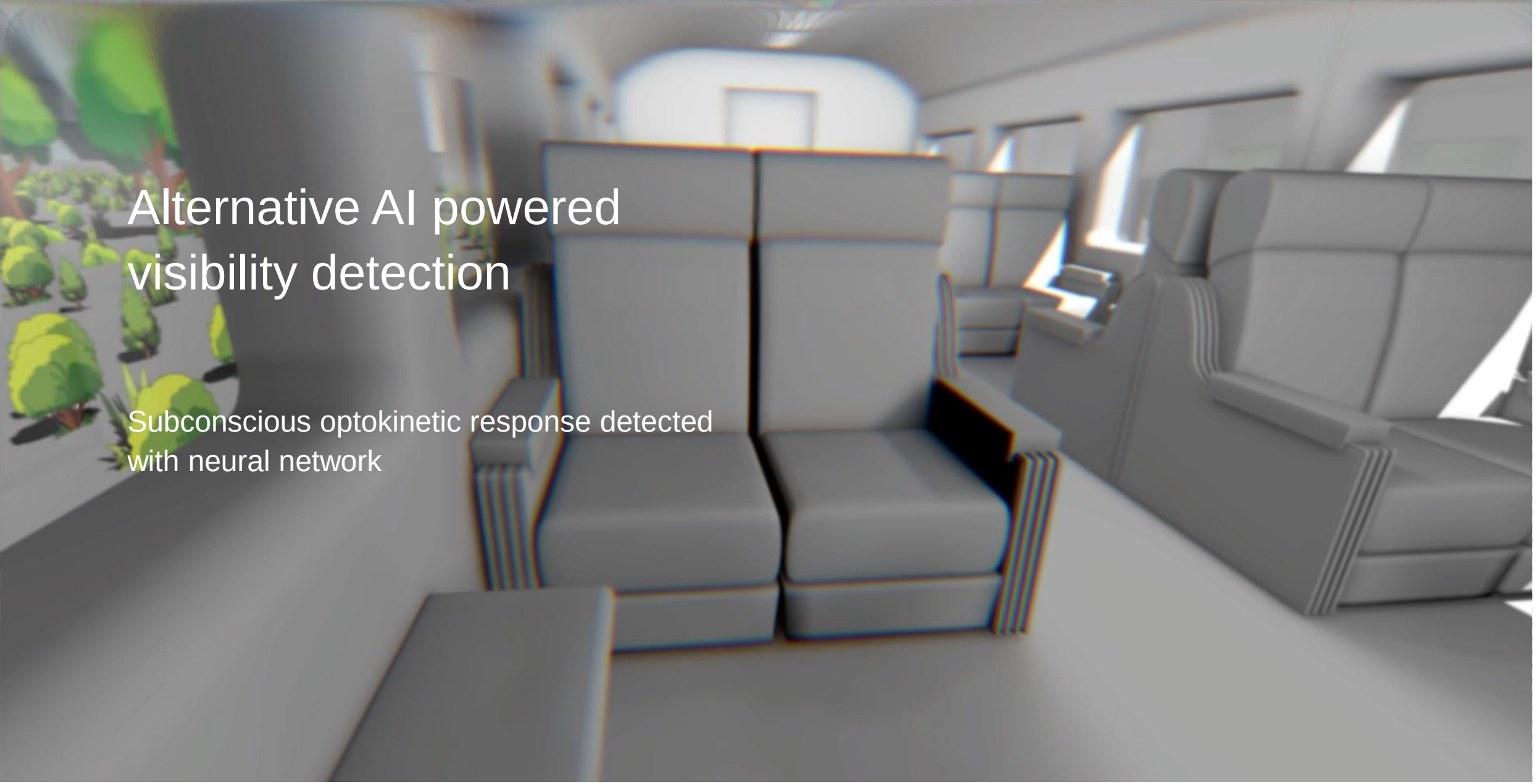
Contrast sensitivity test with rule-based algorithm, two challenges:

- Variability in user behavior
- Robust visibility detection

AI is the solution,
when it is applied in a suitable scheme

AI OKR

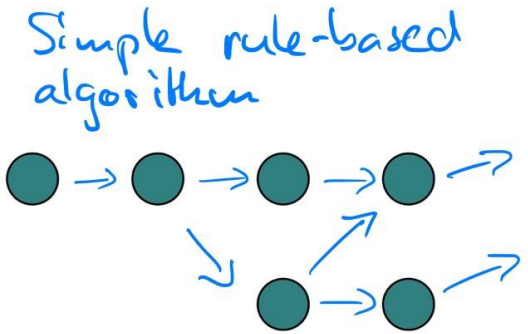
Optokinetic Response

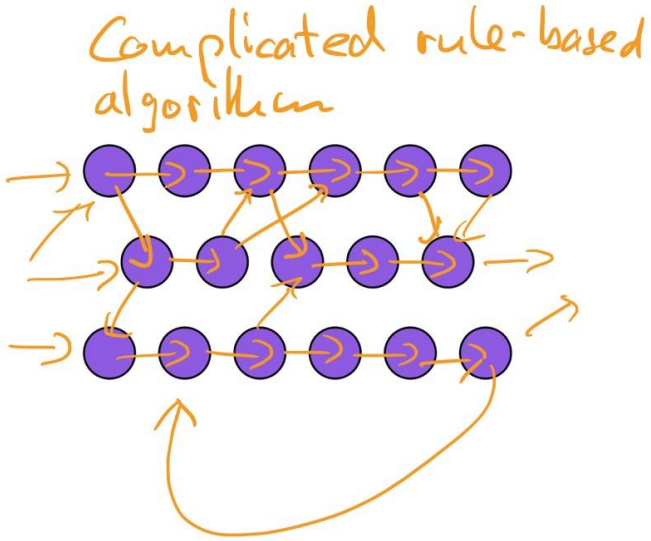


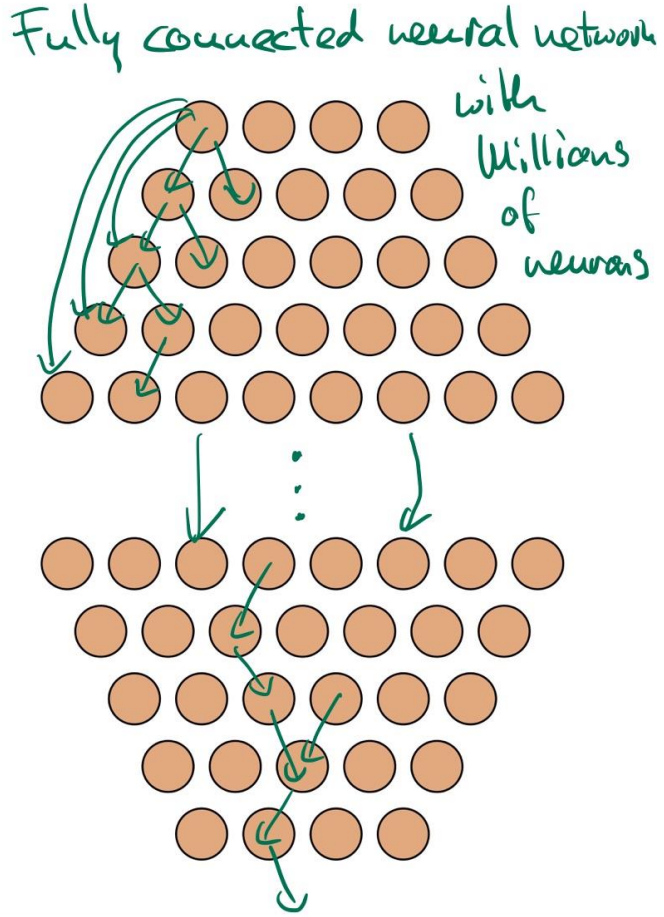
Alternative AI powered visibility detection

Subconscious optokinetic response detected with neural network

Human defined rules
versus
trained neurons







Everything should be made as simple as possible, but not simpler

Generated with AI · September 2, 2024 at 9:19 AM

Striving for simplicity: Finding the sweet spot in medical device development

Your Contact

Stephan Wyder
Project Lead
T +41 979 16 11
stephan.wyder@helbling.ch

Helbling Technik Bern AG
Stationsstrasse 12
CH-3097 Liebefeld-Bern
www.helbling.ch