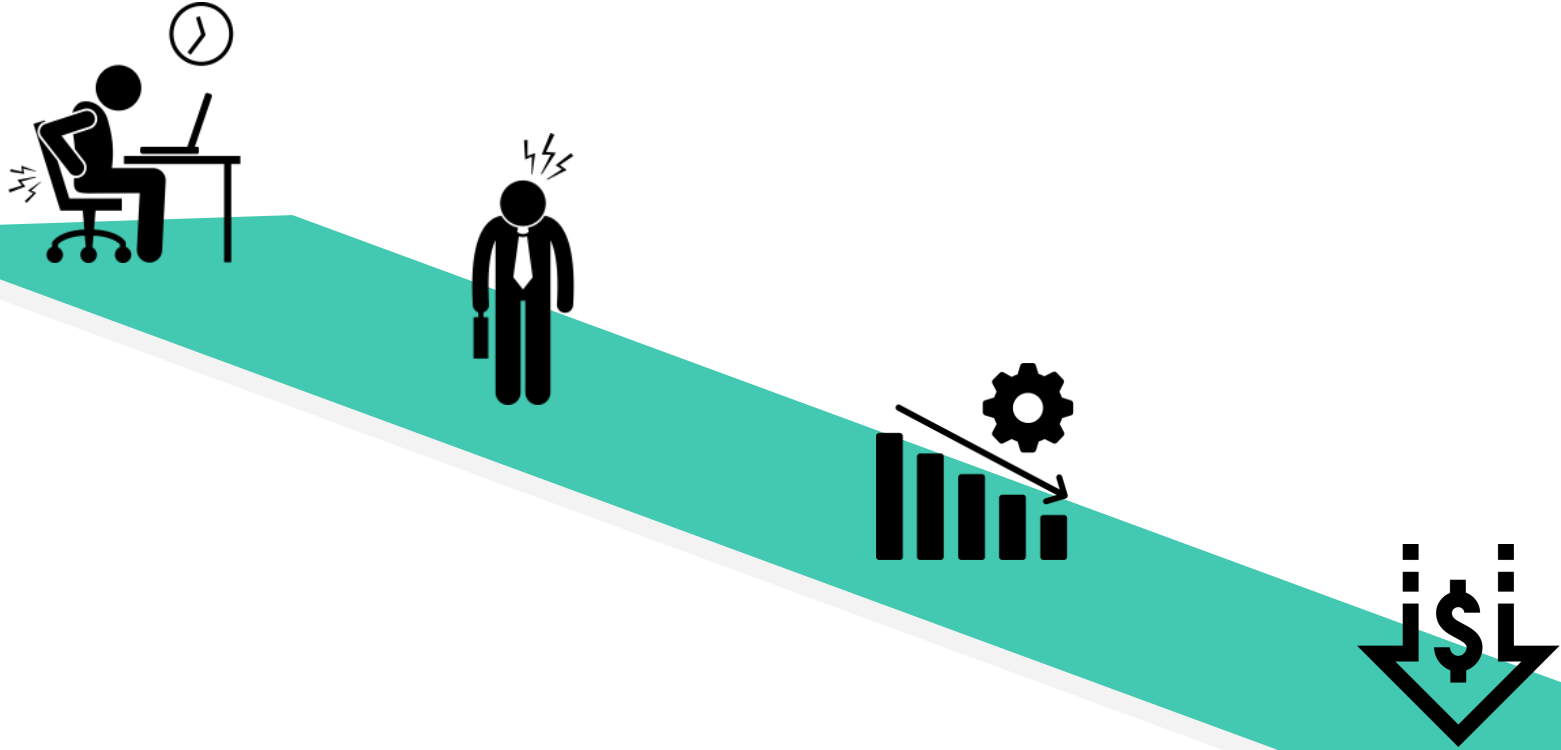


S I T - U P

What are the existing **problems**?



What are the existing **problems**?

- ❑ Long-periods of sitting with poor posture per day

8hrs

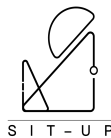
- ❑ Cause for work related disability

No.1

- ❑ Cost in lost time per year

\$20bil.

* Cost on low-back pain per employee: \$1685



Current solutions for Posture correction

Not effective to solve posture problems



Posture brace



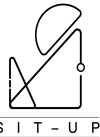
Muscle contraction detector



Ergonomics furniture

Sit-Up! builds Habits

- Make users get rid of the dependence on ergonomic chairs and back brace.
- Users would not form physical dependency on our product, but gradually develop good sitting habits.
- With Sit-Up!, you can maintain correct posture anytime, anywhere.

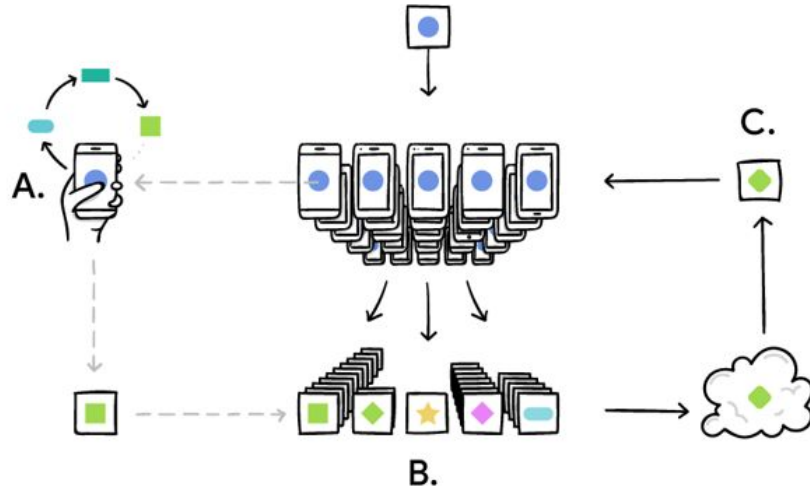


Sit-Up! bring **Benefits** to Users



Countering Surveillance Crisis

Federated learning ensures **Security and Privacy**



Algorithm:

Federated Stochastic Gradient Descent (FedSGD)

Business Model

Base price(~\$69.99) + Freemium



Partner with Health Insurers
through Health Care Bundle

Rising Consumer Demands, 16.4 Million Potential Users in Canada

Organization →



Insurer



Enterprise

Individual →

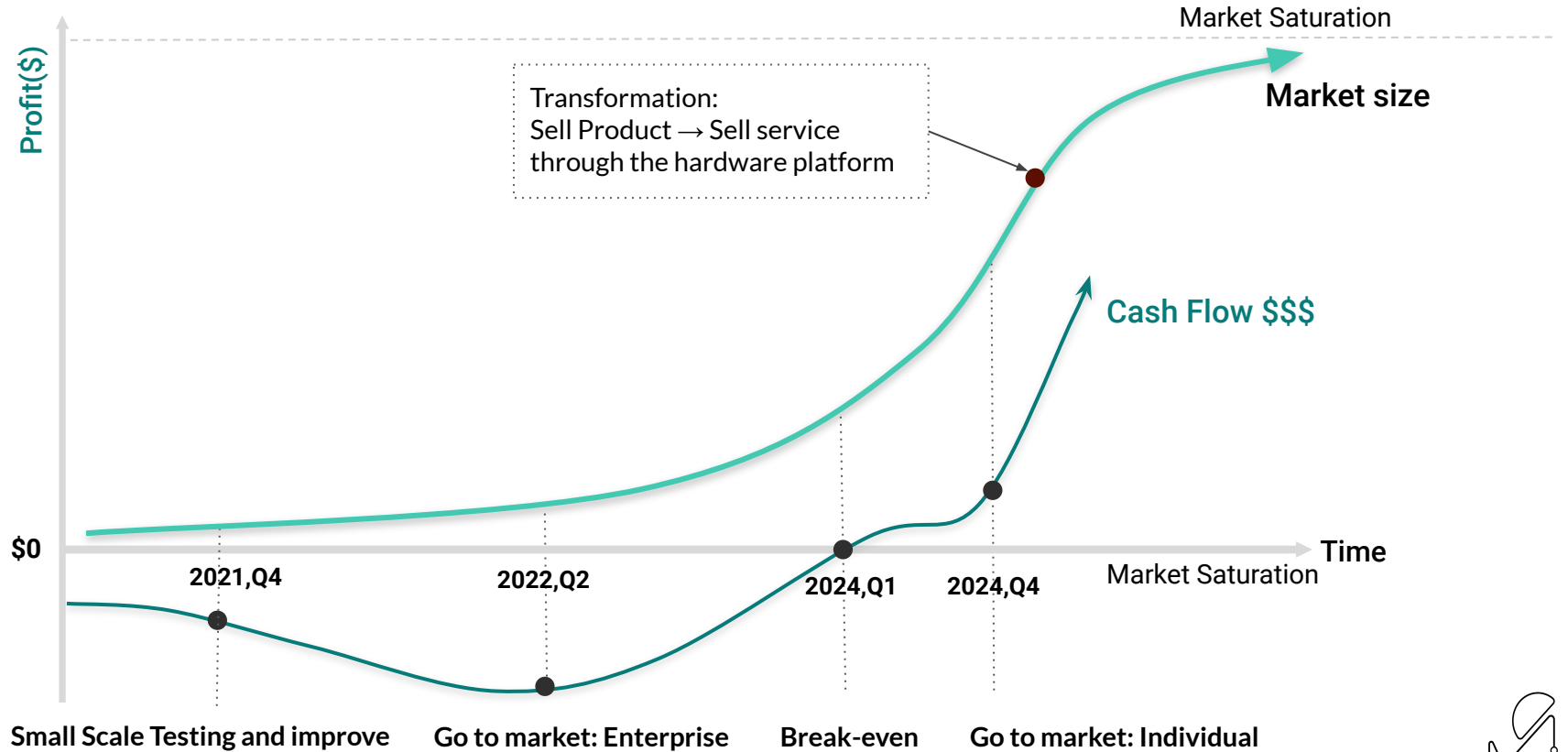


Office worker

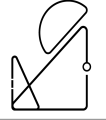





Student

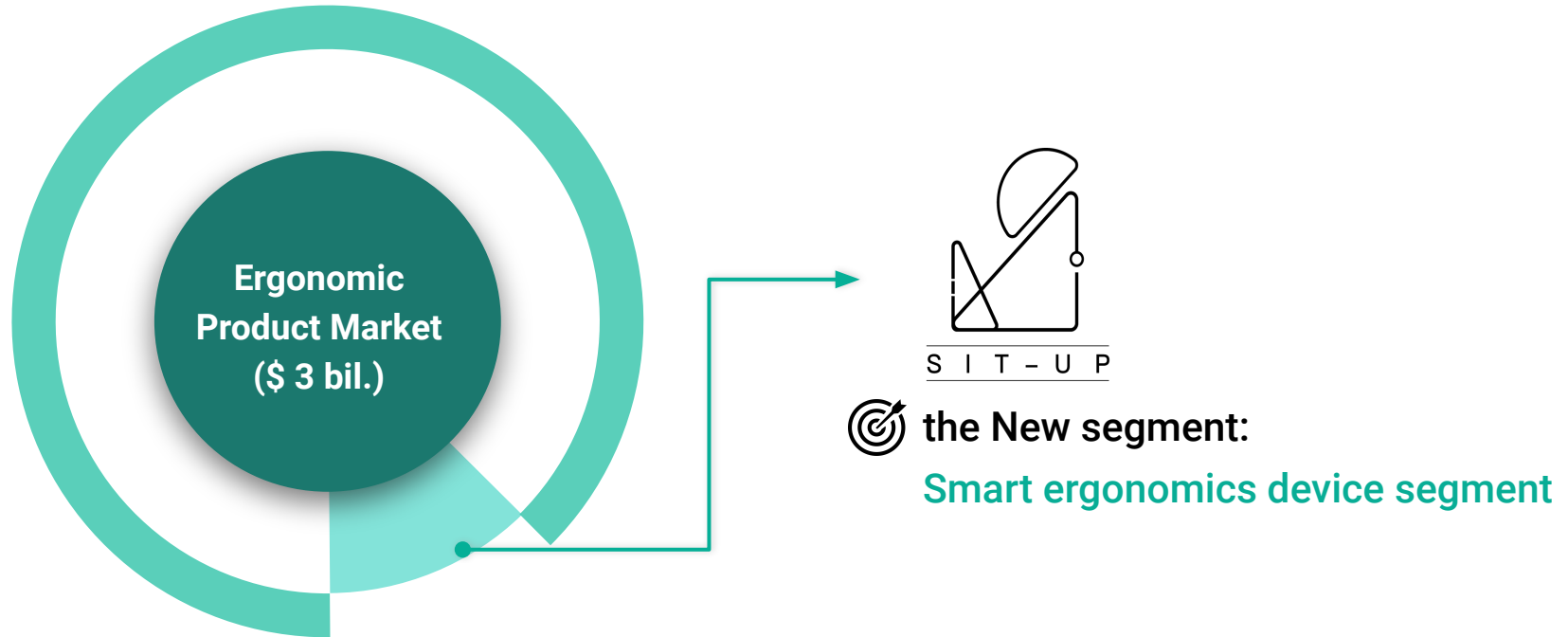
Timeline



Sit-Up! vs. Other current ergonomic products

	<div>Our product</div> <div> S I T - U P</div>	<div>Posture Apps</div> <div></div>	<div>Wearable device/brace</div> <div></div>	<div>Ergonomic Chair</div> <div></div>
Flexibility	✓✓	✓	✓	
Comfort	✓			✓✓
Cost effectiveness	✓✓	✓	✓	
<u>Self-control</u>	✓✓			

Go-to-Market: **Complement** to current ergonomic product





“ , the *AI-based* ergonomic device
that remind and help you maintain
correct sitting postures with *real-time*
feedback *without any physical contact* ”

Link to our fully functional product page: <https://github.com/yAva-vns/Sit-up>



Reference

<https://www.backfithealth.com/7-detrimental-effects-of-bad-posture/#:~:text=1.,cause%20muscle%20tension%20and%20stiffness.>

<https://www.alliedtravelcareers.com/blog/8-negative-effects-of-bad-posture/>

<https://www.ehstoday.com/health/article/21918319/bad-posture-habits-lead-to-a-decrease-in-productivity>

<https://fmpglobal.com/blog/the-back-breaking-cost-of-back-pain-in-the-us/#:~:text=The%20Cost%20of%20Back%20Pain&text=As%20the%20leading%20contributor%20to,to%20businesses%20of%20%24225.8%20billion>

<https://www.thegoodbody.com/back-pain-statistics/>

<https://www.startstanding.org/back-pain-statistics-and-facts/#references>

<https://www.acatoday.org/Patients/What-is-Chiropractic/Back-Pain-Facts-and-Statistics>

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6188764/>

<https://www.therooststand.com/blogs/the-roost-blog/12381213-the-cost-of-poor-posture>

https://www.ergoswiss.com/fileadmin/user_upload/Benefits_of_ergonomics_Ergoswiss_EN_w.pdf

<https://www.statista.com/statistics/464156/number-of-full-time-workers-in-canada/>

<https://www.univcan.ca/universities/facts-and-stats/>

<https://ai.googleblog.com/2017/04/federated-learning-collaborative.html>

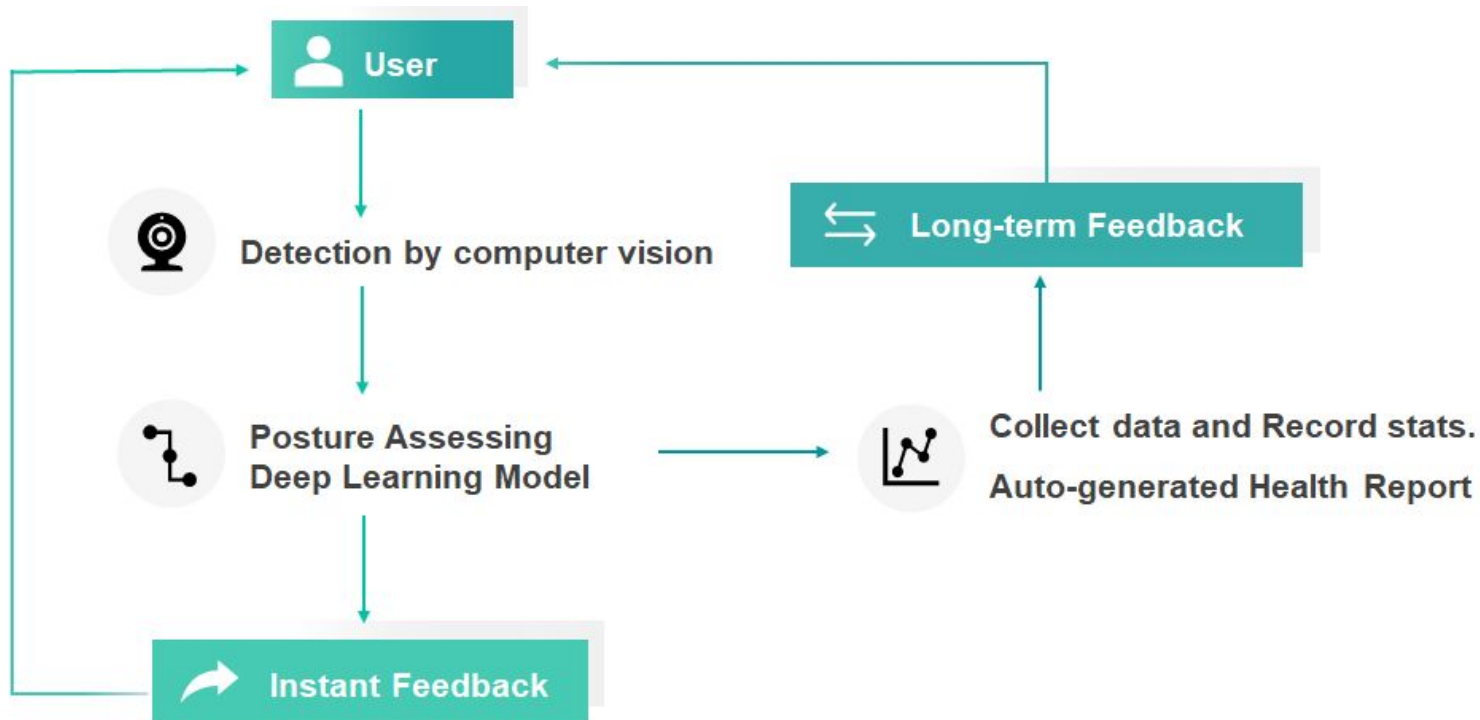
Appendix



S I T - U P

THE PROCESS OF USE

Sit-Up! – How it works?



APPENDIX

- Real Product

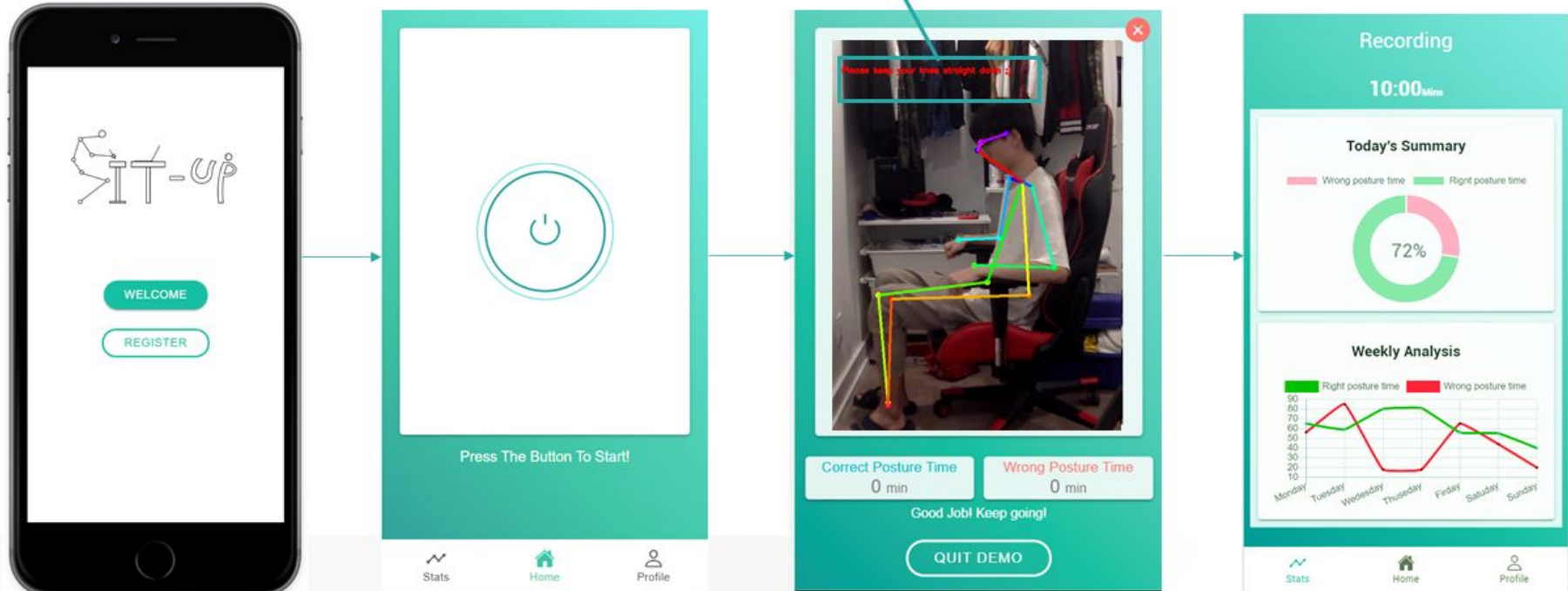


Flexible with Rotation, Round screen design and auto-calibration algorithm allows it to face up no matter how you orient it



THE PROCESS OF USE

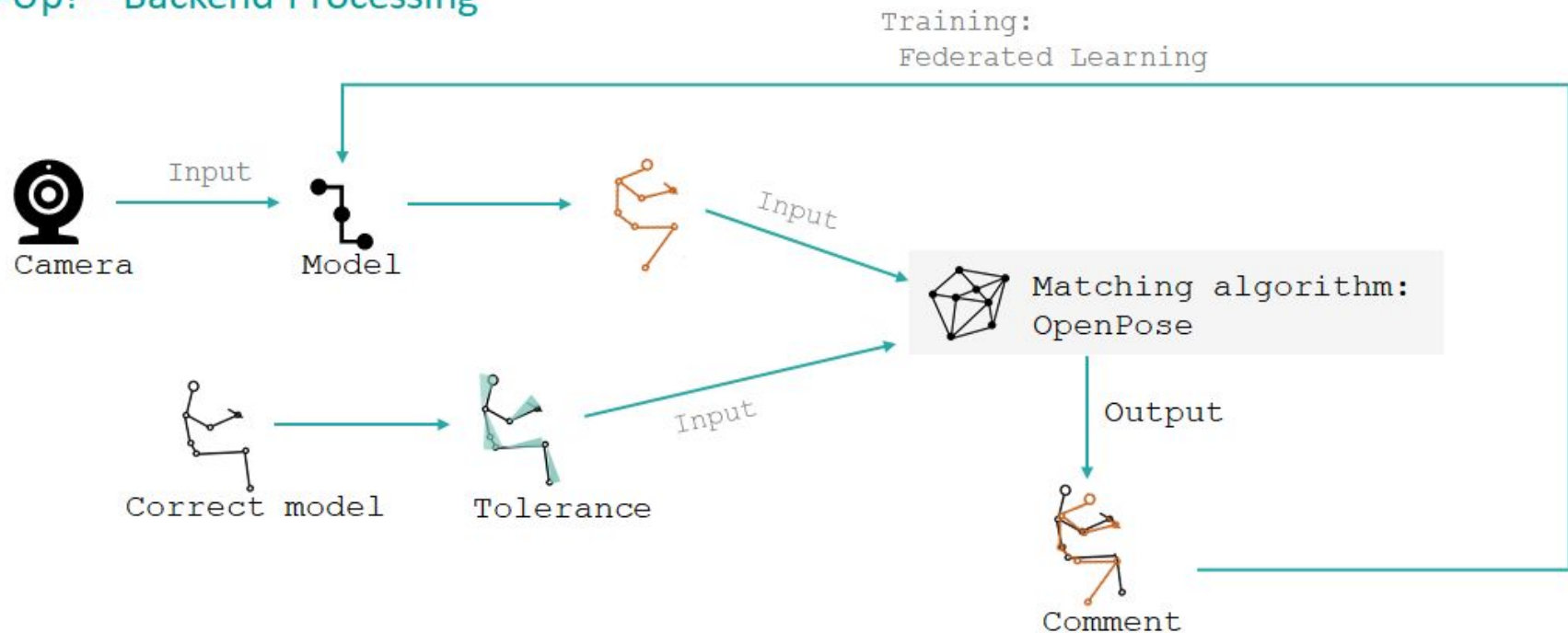
Sit-Up! – Frontend Interface



Cross-platform Frontend Tool: Ionic

THE PROCESS OF USE

Sit-Up! – Backend Processing



Dataset: COCO dataset

Algorithm: OpenPose

Accuracy: 80+% for each individual joint

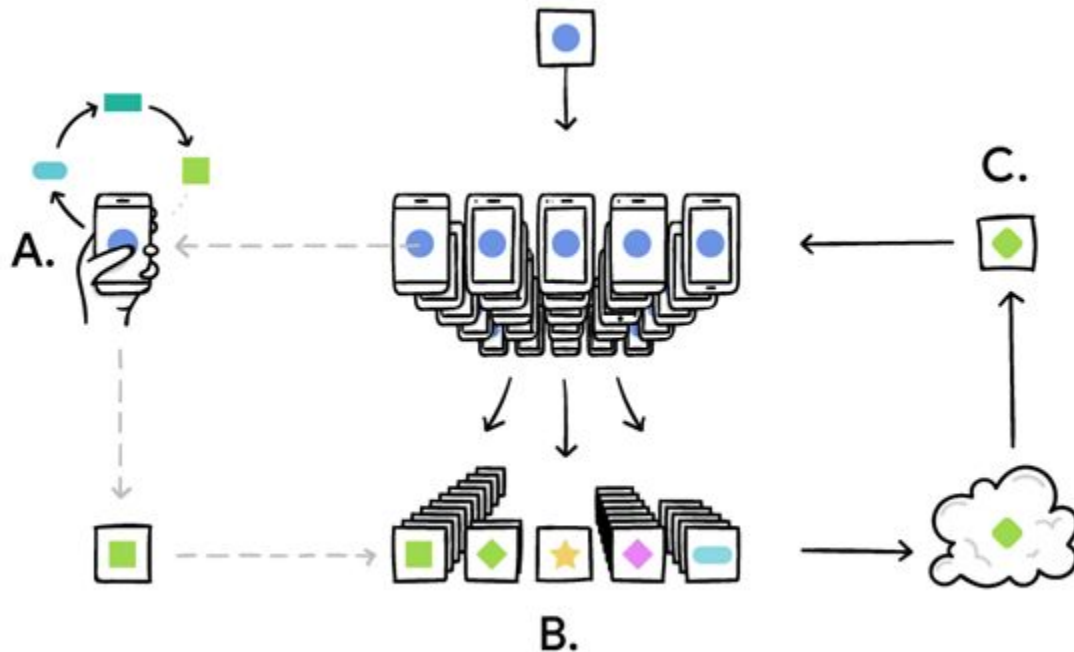
Timeline

All products can use our newest algorithm through firmware update



COUNTERING SURVEILLANCE CRISIS

Federated Learning ensures Security and Privacy



Algorithm:

Federated Stochastic Gradient Descent (FedSGD)

- Training Data

What is COCO?



COCO is a large-scale object detection, segmentation, and captioning dataset. COCO has several features:

- ✓ Object segmentation
- ✓ Recognition in context
- ✓ Superpixel stuff segmentation
- ✓ 330K images (>200K labeled)
- ✓ 1.5 million object instances
- ✓ 80 object categories
- ✓ 91 stuff categories
- ✓ 5 captions per image
- ✓ 250,000 people with keypoints