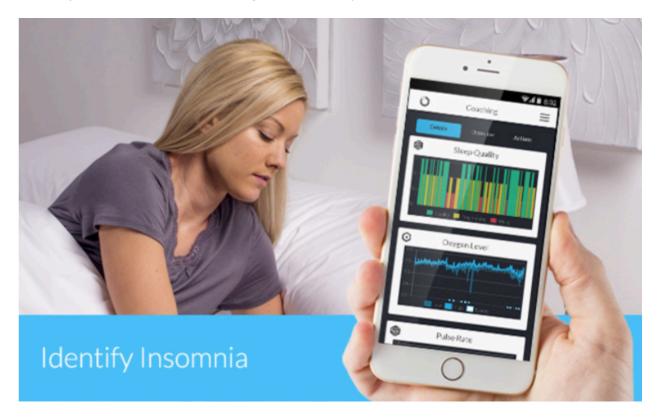


# FIELD SESSION Advanced Software Engineering

SomnoHealth is a Golden-based consumer health startup - we want *your* help with a "big data" project!



Start here: <u>www.GetEverSleep.com</u>

EverSleep brings hospital grade sleep technology directly to the consumer to monitor and improve sleep.

Sleep measurement happens in our wearable device, that data is BTLE transmitted to our mobile phone app. The app does complicated analyses and delivers clinically based sleep improvement coaching directly to the user.

Our server collects anonymized data every morning from our users and beta testers - 15,000 lines of data per user, per night. *We've got 30,000 nights of data, and more coming in...* 

## **Corporate Wellness Portal**

We need you to improve our Web-Based "Corporate Wellness Portal" so that companies can "look" into our server and see how their employees are sleeping!

We already have a web "portal" (built by a team from CSM!) that lets us "look" into the server and retrieve EverSleep user data. However this portal is not complete, needs some additional features...

We need an improved portal that lets our corporate customers view a beautiful web-front end of their employees sleep data.

This portal should have good password security, lots of cool reporting, graphs, summary and trending statistics, etc.

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#### USE CASE:

A local commercial trucking company has 20 drivers. The trucking industry is notoriously sensitive about sleep apnea. A truck crash kills or injures someone in the US every 14 minutes! About 1/2 of those crashes are fatigue related.

So, the trucking company purchases 20 EverSleep units, and a "subscription" to the portal.

The "subscription" gives them access to <u>your</u> beautiful web viewer - which lets them register each truck driver and automatically downloads (emails?) sleep reports from the server daily.

A summary report is also generated....

"These 10 drivers are doing just fine, these 3 drivers haven't used EverSleep in more than 1 month, and these 5 guys REALLY need to go to the doctor!"

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Specific Tasks...

#### **GROUP ONE 3-5 Students**

Build Admin capability to manage "Groups"

i.e. the nurse at Coors wants to add 50 employees to the portal User Interface enhancements for individual users and group managers. Advanced searching capability

ie. Find all men, over 60, with allergies and sleep apnea

#### **GROUP TWO 3-5 Students**

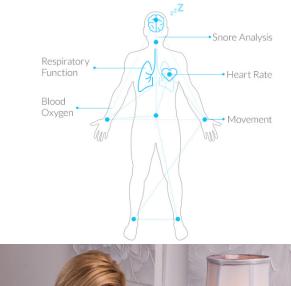
Advanced web graphics, charting, plotting, trending, reporting, etc. Outbound email reporting, summary graphics, automated PDF generation, etc.

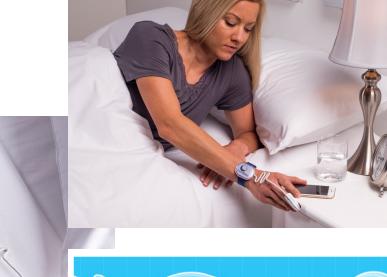
#### STRETCH GOAL

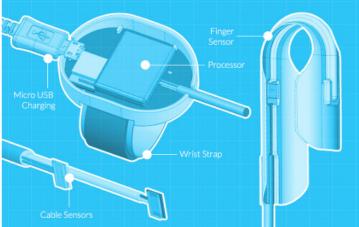
Machine Learning! Can you predict which users will get better?

#### What's Different About EverSleep?

EverSleep uses advanced **sleep-lab technology** to provide the data and coaching you need at home.











## Schedule:

Sprint 1: Intro, definitions, access to tools, pick a Project Manager

Sprint 2: Specific requirements, begin work

Sprint 3: Implementation, Check-in

Sprint 4: Implementation, Check-in, Course Correct

Sprint 5: Implementation, Check-in, Final Update

Sprint 6: Final Tweaks, Presentation

# **Technologies:**

- JSON Data
- OAUTH2 & JWT Tokens
- AWS Servers
- JavaScript / Node JS (Current Portal)
- Relational Database (SQL or clone)
- GITLAB Repository
- Agile Tool = Taiga
- See photos and a sample JSON file below!

## **Specifics:**

- Depending on corona virus situation all work will be via Zoom conference
- No required "work hours". We will have a single 1-hour meeting every week.
- Guidance from senior engineers
- Potential Internship after the project is over
- If we do meet onsite at our facility... No Dress Code! T-shirt and Flip-Flops are OK
- TWO Teams of 3-5 students
- p.s. We're the Fun Team!

# **Contact:**

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p.s. If anybody wants to purchase an EverSleep from our website... here is a secret checkout code for employees only! \$25 discount: SAVE25

www.GetEverSleep.com

"id": 2011, "startTime": "2018-02-13T08:49:30.000Z", "endTime": "2018-02-13T14:35:00.000Z", "endReason": "manual", "analysis": { "startTime": "2018-02-13T01:49:30-07:00", "pr50": 0, "pr90": 0, "tib": 20730000, "tst": 19920000, "twt": 1140000, "gst": 14100000, "frag": 5820000, "error": 0, "qualitySleepPercent": 68, "od2": 71, "odi2": 12, "od3": 34, "odi3": 6, "pr10": 52, "pri10": 9, "mf": 121, "mfi": 21, "arousalsPerHour": 10.301204819277109, "baseFragmentation": 180, "longestQst": 3180000, "so": "2018-02-13T02:00:30-07:00", "sol": 420000, "sol0To30": true, "sol30To60": false, "sol60Plus": false, "waso": 900000, "waso0To10": false, "waso10To30With": false, "waso10To30Without": true, "waso30PlusWith": false, "waso30PlusWithout": false, "sleepGoal": 0, "diaryNotesPointer": null, "bedtimeDiff": 10170000, "time88": 67000, "eai": 0, "eai0To30": true, "eai30Plus": false, "odiRelation": null, "wasoCorrelation": null, "sleepLoss": null, "highSpo2": 99.6, "lowSpo2": 79.1, "highPulseRate": 118, "lowPulseRate": 54, "spo2Time90To100": 20577000, "spo2Time80To90": 117000, "spo2Time70To80": 6000, "pulseTime90Plus": 260000, "pulseTime80To90": 1193000, "pulseTime70To80": 11764000, "pulseTime60To70": 6524000, "pulseTime50To60": 959000, "pulseTime40To50": 0, "pulseTime30To40": 0, "longestDurationPulseRateGreaterThan90": 180000, "longestDurationPulseRateLessThan50": 0, "sleepOnsetInsomniaDuration": 0.