REVISION : is augmented reality

is artificial intelligence

is physical computing

is a Parkinson's Disease therapy.

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REVISION is an augmented reality based Parkinson's Disease therapy which aims to assist those with mobility disorders & help maintain motor skills. Upcoming **AR glasses** and **AI** are set to completely disrupt therapies which has not seen change in decades. The underlying platform provides a level of metrics and data previously unforeseen by healthcare practitioners & researchers. Revision adds engaging interactive experiences for a higher frequency and longer therapy sessions at home. The incidence of PD is expected to double over the next two decades. Ultimately, the primary goal of Revision is to paint a clearer picture of efficacy through data while improving the quality of life for sufferers.

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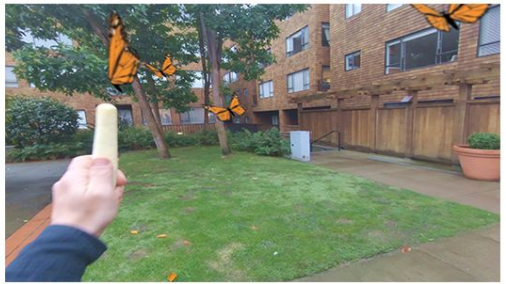
REVISION Focus on Parkinson's Disease

While we've identified many areas of therapy in which AR can be of benefit, Revision will focus on Parkinson's Disease. One reason is because viable physical therapies are already known, making a comparitive study much more readily attainable than with other conditions (such as Generalized Anxiety Disorder, for example). Please see the 'roadmap' slide showing potential future therapies at the end of this deck.

visual cues for gait



gamified physical therapy

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REVISION Solutions

1- **Data :** Data captured during therapy gets a major upgrade. Revision collects an enormous amount of data for analysis & visualization. Efficacy of therapy can be readily scrutinized with a much clearer view than previously seen.

2- **Access :** Women and people of color with PD are less likely to seek therapy or nursing services than their white male counterparts. Existing support systems may not offer the same access to all sufferers. At-home therapy can avoid associated anxieties which would be extremely valuable for these patients.

3- **Cost to hospitals :** Therapies can occur at home, reducing the frequency of inpatient care at clinics & hospitals, positively impacting costs of operations, staffing of specialists, and the overhead of working with insurance providers. As the incidence of PD is expected to double over the next two decades, the financial burden of an increased need for inpatient care will also rise.

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REVISION Product

The product we will build comprises 3 parts.

1- **Augmented Reality Glasses :** Third party AR glasses which are intuitive to operate, with no learning curve, showcasing our interactive experiences. Please see the 'AR Glasses' slide for more information.

2- **Magic Wands :** Our ergonomic sensors for data acquisition used as handheld controllers or wearables, this hardware is our patentable intellectual property. Please see the 'Sensors' slide for more information.

3- **Data :** Unseen by users, the backend of the system contains the data we capture. Compliance with gov't EHR / EMR regulations is planned. Accumulated data is used as a patient's digital twin.

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REVISION Customer

As mobility degrades, and stutter progresses, PD sufferers require more care from family and healthcare professionals. We plan to make kits available for sale through hospital partnerships and via direct sale. In the case of hospital groups, we plan to explore integration with existing healthcare IT ecosystems. CRM systems such as Salesforce's Healthcloud makes data and insights highly accessable. These potential partners all have specialties in PD care, and may enable outreach to end users through existing patient databases : GE Healthcare, IBM (Centricity and Watson), Salesforce (Healthcloud & Einstein), OneMedical, Siemens Healthineers, Abbot Laboratories, Philips Healthcare, Medtronic, and Johnson & Johnson.

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REVISION Market Opportunity

1- **AR in the healthcare market** is witnessing a big boost with a high expected CAGR of **33.36%** and market value expected to rise from US**$621.7 million** in 2018 to US**$3.49 billion** in 2024.

2- The global **Parkinson's disease therapeutics market** was approximately USD **2.61 billion** in 2018 & is expected to generate around USD **5.28 billion** by 2025, at a CAGR of around **10.6%** between 2019 & 2025.

3- **CRM** is the fastest growing software market today. It was a **$14 billion** industry in 2010 and is expected to reach **$80 billion** by 2025. That's nearly a 600% increase. (CRM platforms are continuing to integrate services of existing healthcare ecosystems via data bridging 'adapters').

4- **Health Information Technology** for Economic and Clinical Health (HITECH) Act, implemented in the U.S. providing USD 20 billion to hospitals and doctors to support their installation of EHRs is expected to fuel business growth in the coming years.

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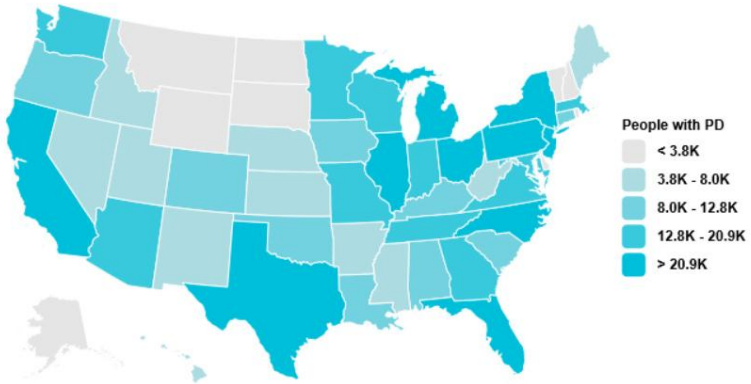
REVISION Market Opportunity

Approximately 1.2 million people in the United States are predicted to have Parkinson's disease by 2030. The most populous states, such as California and New York is expected to have >30,000 Parkinson's disease sufferers each.



Target costs of end-user kit :

1- $500 expected cost of AR glasses

2- $50 Magic Wand sensors

3- $100 Compute module with 3G data connection

Total $650 approx.

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REVISION AR Glasses

Taking a hint from Gartner's Hype Cycle, we'd be in development at the perfect time if Revision were to start production by Q1 2023.

Besides Apple's Glasses (project Kuo), Snap Spectacles 4, Niantic, nReal (Light) and Samsung targetting consumers, enterprise options include Magic Leap (ML2), a new Google project, and Metavision has been reinvented with leadership from Qualcomm. Many other companies such as North (Focalz), LG (U+), Bosch (Light Drive), Vuzix (Blade), and Epson (Moverio) are all contenders.

We are targetting Apple's Glass and Snap's Spectacles 4 for our release.

Apple Project Kuo

Snap Spectacles 4

Niantic AR Glasses

Magic Leap 2

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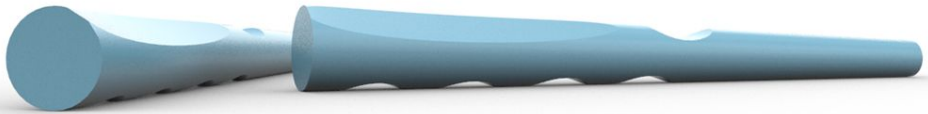
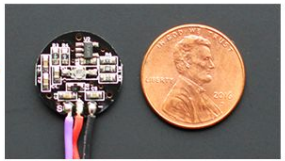
REVISION Sensors

The cumbersome controllers commonly associated with virtual reality, or the learning curve associated with hand gestures required by the Hololens are not ideal for Parkinson's sufferers. Our solution will provide a natural and intuitive user experience "out of the box". Revision is :

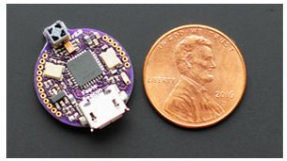
- Very lightweight
- Intuitive to use
- Has a minimal button-free design
- Wirelessly charged



Heart rate
EEG
Perspiration
Blood pressure
Breath



Heartrate / pulse sensor



CPU / IMU / Wireless

Atmel SAM R21e/R18e
9DOF IMU
XBee wireless mesh
data streams at 115kbps
18' squared room-scale beacon sensitivity

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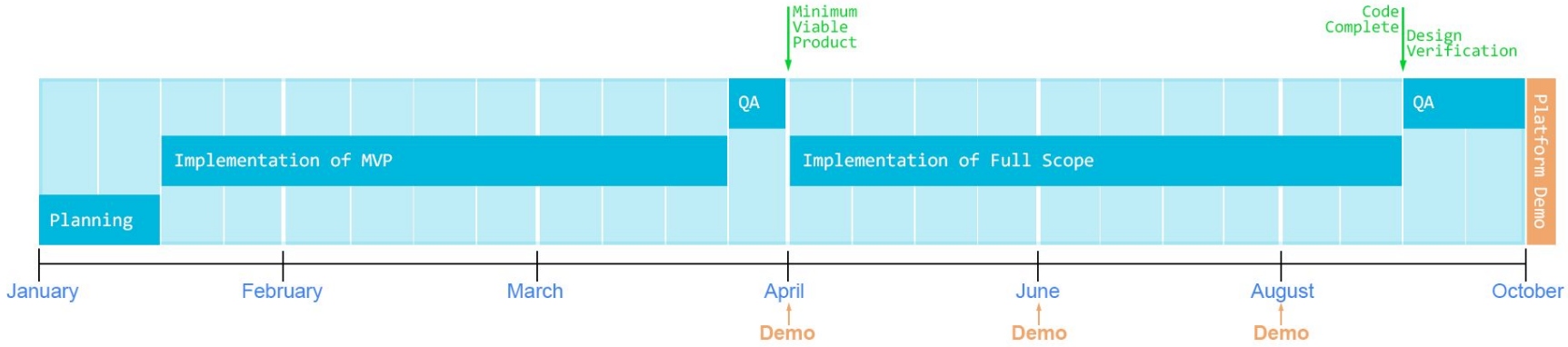
Below is a nine month calendar resulting in a functional MVP product demo and showcase of the back-end.

We'd employ a team of six roles consisting of a FT lead, FT experience designer / creative director, FT Unity developer,

PT electronics engineer, and a FT full stack developer. The 'Full Scope' platform demo shows the entire solution end-to-end.



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Use case : Parkinson's Disease - Catch a butterfly

Parkinson's sufferers often experience a degradation of motor skills, frequent falls, and limited mobility over time. Motor skills can be protected by daily excersizes. Using IMU sensors (an IMU senses three dimensional rotation) embedded into lightweight 'Magic Wands', we can yield specific physical activities from PD sufferers. The patient would see the wands as butterfly nets while butterflies start to appear in view. The buterflies flutter with a bias towards left and right hands and eventually move to areas encouraging left/right arm movement. This yields the desired physical activity while the IMU is also providing a live streaming metric of the users performance at a select difficulty level. The difficulty level is self-learning and changes the challenge as the user catches butterflies. If the software deems it necessary to add more butterflies near the left hand, it adjusts dynamicaly. See video example.

used for diagnostics, reporting, & machine learning.

quality of engagement yields more frequent engagement.

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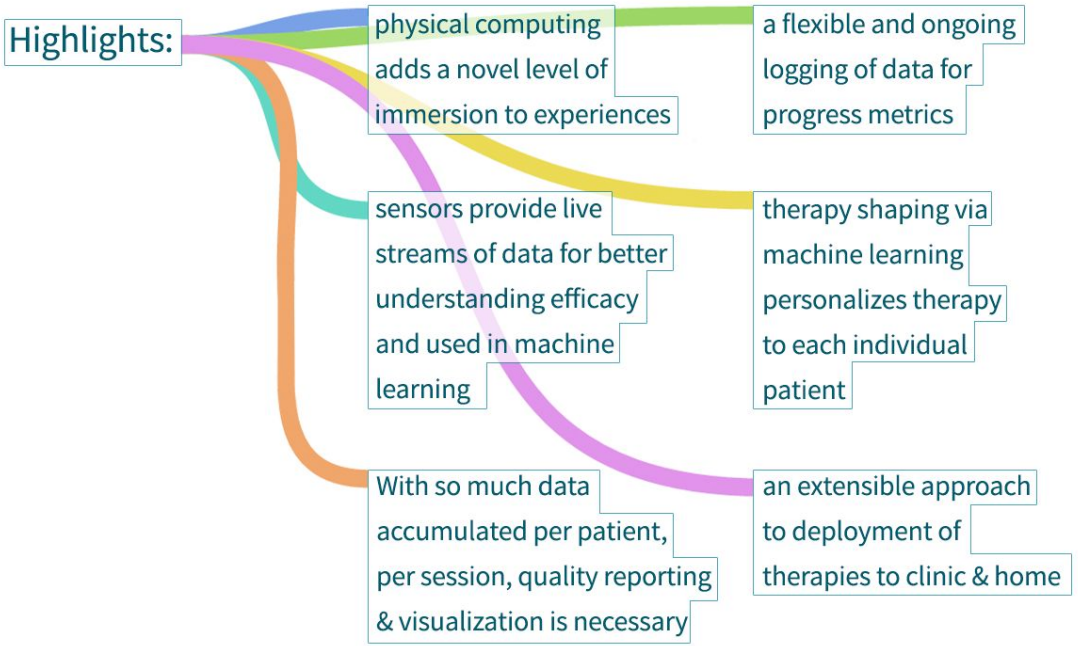
Highlights:
physical computing adds a novel level of immersion to experiences
a flexible and ongoing logging of data for progress metrics
sensors provide live streams of data for better understanding efficacy and used in machine learning
therapy shaping via machine learning personalizes therapy to each individual patient
With so much data accumulated per patient, per session, quality reporting & visualization is necessary
an extensible approach to deployment of therapies to clinic & home

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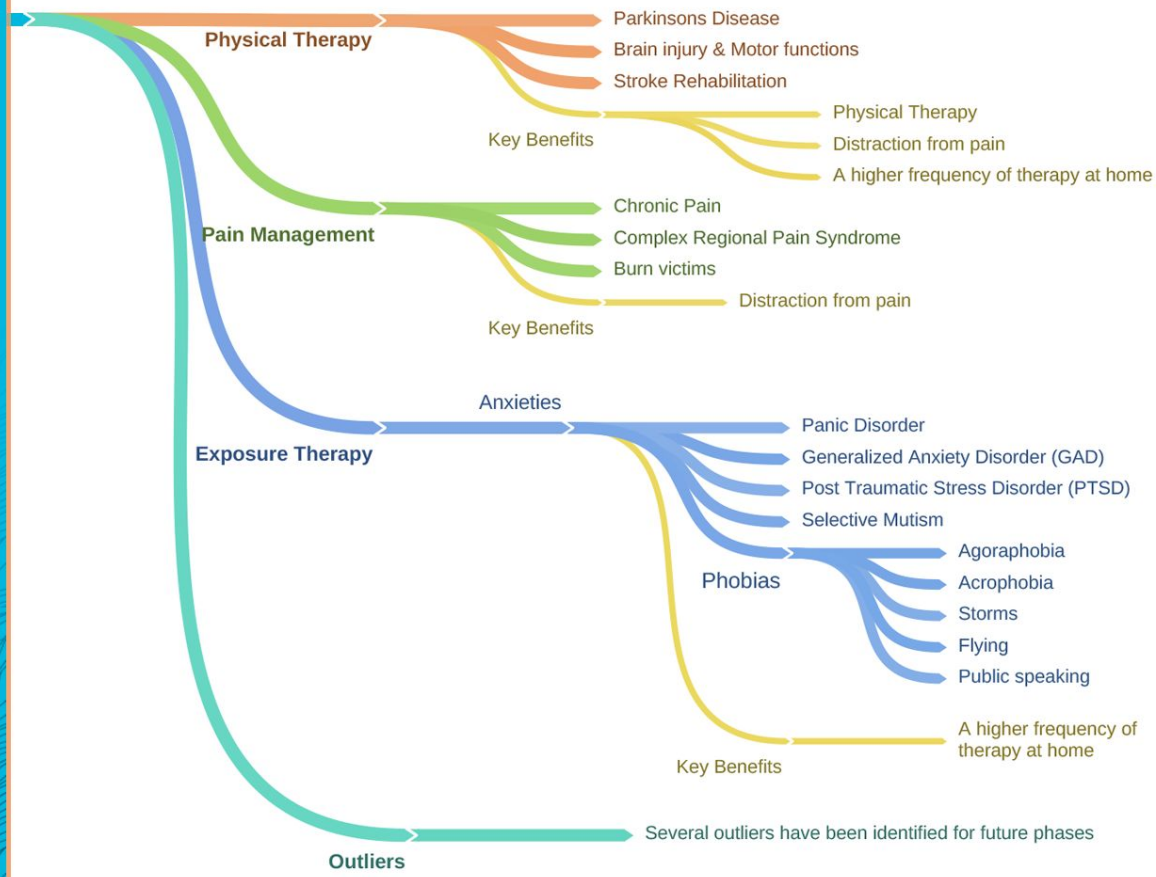
Future Therapies Roadmap



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Founder

Alpay Kasal

The initial idea of Revision started with Alpay's relationship with Parkinson's Disease via a family friend. Having cofounded NY based experiential product design firm Supertou.ch in 2004, he's consistently worked with cutting edge technology and materials. Alpay currently runs experiential design firm Bignoodle LLC based in San Francisco, please see the Bignoodle Capabilties Deck. Alpay also serves as a AR / VR / MR Product Specialist for Google. Alpay is seasoned as a founder, team lead, mentor, has been through the patent process several times over. He is well equipped to see this project to execution and bring it to market.

Thank you.

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