

# Hackathon Idea

## 1. Healthcare

### Competition

1. **Da Vinci Surgical System:** A widely known robotic surgical system that allows surgeons to perform minimally invasive surgery with enhanced precision.

**Website :** <https://www.intuitive.com/en-us/patients/da-vinci-robotic-surgery/about-the-systems>

2. **ROSA:** This robot assists in neurosurgery, helping with the placement of surgical instruments.

**Website:** <https://www.zimmerbiomet.com/en/products-and-solutions/zb-edge/robotics/rosa-brain.html>

#### Reference 1 for application info :

<https://www.zimmerbiomet.com/content/dam/zb-corporate/en/products/smart-orthopedics/robotics/rosa-one-brain/ROSA-One-Brain-Application-Brochure-REV-1.pdf>

#### Reference 2 for deep brain

**surgery:** <https://www.zimmerbiomet.com/content/dam/zb-corporate/en/products/smart-orthopedics/robotics/rosa-one-brain/8920 ROSA One Brain DBS Brochure R1.pdf>

3. **Mazor X:** AI-powered system for spine surgery, assisting in preoperative planning and guiding surgeons during procedures.

**Website:** <https://www.medtronic.com/us-en/healthcare-professionals/products/spinal-orthopaedic/spine-robotics/mazor-x-stealth-edition.html>

**Reference 1:** <https://www.medtronic.com/content/dam/medtronic-com/us-en/hcp/therapies-conditions/spinal-orthopaedic/spine-robotics/documents/mazor-robotic-guidance-system-brochure.pdf>

4. **Arthromeda:** An AI system designed for knee replacement surgery, assisting with implant positioning and alignment.

**Website :** <https://www.arthromeda.com/arthroplan>

### **They have 2 products**

**1. ArthroSight-PS™:** ArthroSight-PS is

Arthromeda's premiere real-time implant positioning system. The platform solution seamlessly combines customization and interactive functionality via the integration of a patient-specific (PS) alignment guide and an intuitive, real-time, intra-operative computer assisted alignment system for accurate and precise implant angular positioning (inclination and anteversion). It also provides a built-in module for leg length difference (LLD) measurement and femoral offset (FO) adjustments.

Link to page : <https://www.arthromeda.com/arthrosight-ps>

**2. ArthroPlan™:** ArthroPlan

is an intuitive, accessible, user-friendly and cost-effective digital templating software for total hip arthroplasty that does not require integration with PACS

Link to page: <https://www.arthromeda.com/arthroplan>

**Suggestion:** It is a startup idea it is highly innovative so the market acquisition will be fast and competition will be vanishing.

## **2. Bank Vulnerability System**

### **Competition**

There are tools not automated such as:

1. Nessus
2. Acunetix
3. Owasp Zap

These are all manual tools not automated which means we can work to make work automated and fast using artificial intelligence

**Suggestion: It will be new as if we apply it as admin system on rbi which monitors other bank .**

### **3. Historical Language Interpreter**

Chatgpt have data for mesopotamia tribe such as we discussed but it is very minor data not exact we want :

**Question: how a is written in Mesopotamia**

**Response :**

In the ancient Mesopotamian cuneiform script, the sound "a" was represented by a specific wedge-shaped symbol. Cuneiform was a system of writing that used wedge-shaped marks made by pressing a reed stylus into clay tablets. Over its long history, the cuneiform script evolved, and the symbols changed in appearance.

Here is a simplified representation of how the sound "a" might have been written in cuneiform:

#### **Cuneiform Sign for "A":**

- The cuneiform sign for "a" might have looked like a small wedge or a short diagonal line.
- It could resemble an upside-down "V" or a small, tilted triangle.

Please note that the actual appearance of cuneiform signs varied over time and depending on the scribe's style. Additionally, cuneiform was a complex script with hundreds of signs representing various syllables, words, and concepts.

To give you an idea, if we were to write the word "alphabet" in a simplified form of cuneiform, using the sign for "a" and some other sounds:

- The sign for "a" might be represented by a small wedge or diagonal line.
- Other sounds like "l," "p," "h," "b," "e," and "t" would each have their own cuneiform signs.
- Putting them together, it might look something like:

- "a" as a small wedge,
- "l" as a sideways "L" with a wedge at the top,
- "p" as a triangular shape with the point downward,
- "h" as a horizontal wedge or a "Y" shape,
- "b" as a wedge pointing right,
- "e" as a series of horizontal wedges,
- "t" as a symbol resembling a "T" with a wedge at the top.

So, a simplified representation of "alphabet" might look something like this in cuneiform:

- "a-l-p-h-a-b-e-t"

Again, please remember that this is a simplified example, and the actual cuneiform script was much more complex with various signs and variations.

**Suggestion : We can work on that as it can really help but not to innovation we are just using simple language models and langchain to use our data**