

**AVATAR MEDICAL™**  
*Democratizing Access to Medical Images*

**Investor Presentation**

**November 2024**



**institut  
Curie**



**PSL**  
UNIVERSITÉ PARIS



**INSTITUT  
PASTEUR**



Funded by  
the European Union

# Our Mission

To deliver patient-specific 3D visualizations to all medical image stakeholders in real-time , where they need it , when they need it .



AVATAR MEDICAL



# About Avatar Medical



Based on 4 years of research at the **Institut Pasteur** and **Institut Curie**  
**13 peer-reviewed publications**



Transatlantic Team: Serial Entrepreneurs, Engineers, Physicists and Surgeons



Funding to Date: **\$13M** (including **\$4M** in non-dilutive grants)



**2 USPTO Granted Patents** + 6 Ongoing Patent Applications



**FDA 510(k) Cleared**  
CE Mark in progress



Multimillion-Dollar Medtech Deal, 12 Paying Customers  
Collaborations with 20+ hospitals in France and the US



**6 VC Funds On Board** (France, US)  
**Currently Raising \$2-3M**

# A Winning Team

We have a veteran founding team with a unique combination of medical, technical and business expertise located in Paris and the USA



CEO

**Xavier  
Wartelle**

29 years in Silicon Valley

Repeat entrepreneur  
(7 times - 4 exits - \$400M)

\$100M raised

French Tech Hub and  
Big Bang Factory founder



CTO

**Mohamed  
El Beheiry, PhD**

20 years in scientific  
software development  
(1000+ citations)

Expert in medical image  
processing, visualization,  
UX/UI, XR

Repeat inventor



COO

**Elodie  
Brient-Litzler,  
PhD**

20 years in MedTech  
innovation and startup  
initiation

Former industrial R&D  
manager and operations  
director of Pasteur tech  
facilities



CSO

**Jean-Baptiste  
Masson, PhD**

Lab Director at Institut  
Pasteur

Chair at Institut Prairie

Bayesian stats, AI, Physics



CRO

**Marie  
Buhot-Launay**

20 years in Sales and  
Marketing in the US

MedTech and VR

French Tech Hub and  
Big Bang Factory founder

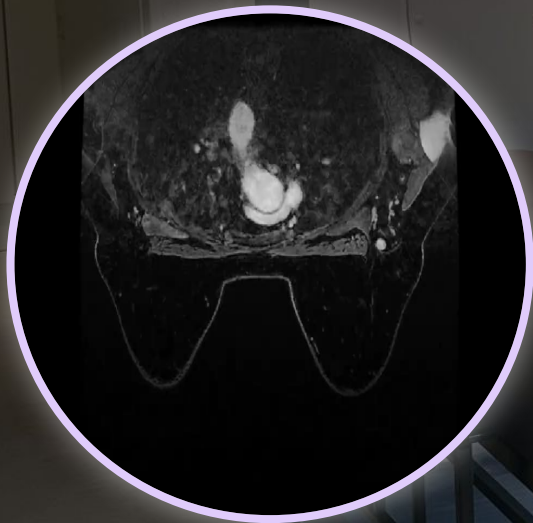




# From an MRI to a Patient Avatar

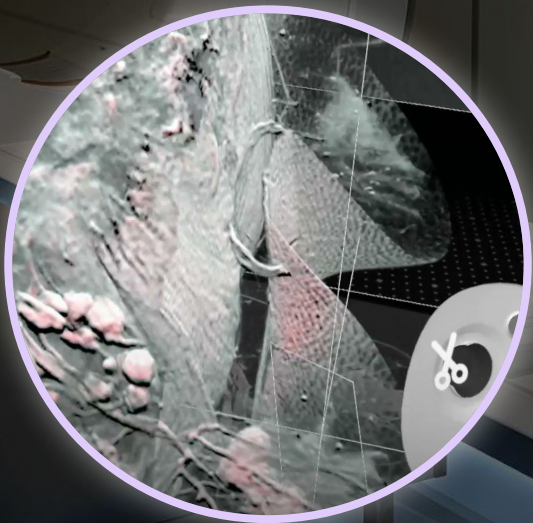
## Breast Cancer MRI

Difficult to visualize the extent of the tumor



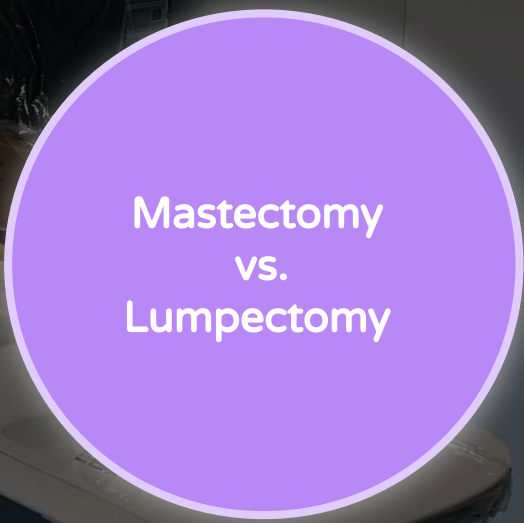
## Avatar Medical

Surgeon and patient can assess the location and size of tumor



## Shared Surgical Decision

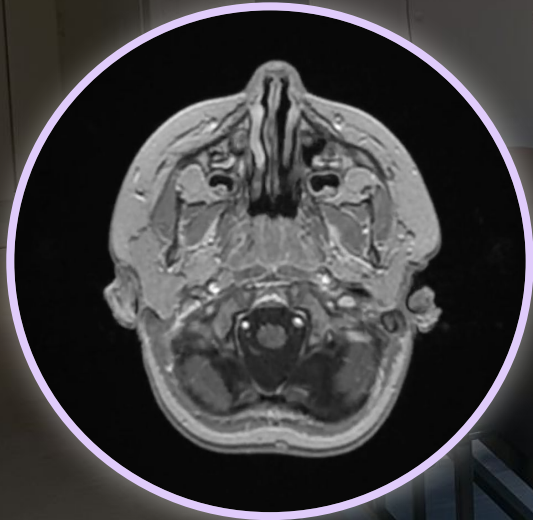
Mastectomy  
vs.  
Lumpectomy



# A New Visualization Experience

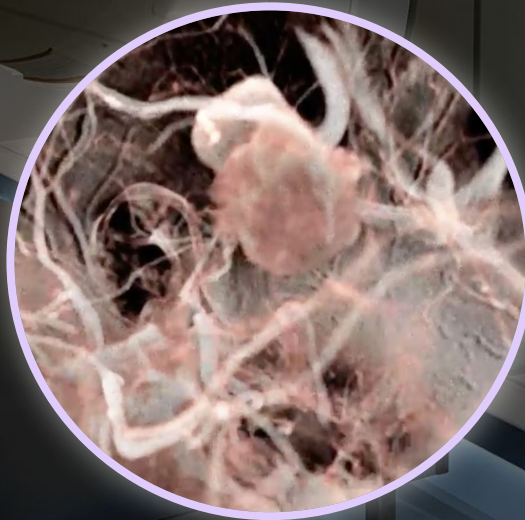
## Brain MRI

Difficult to visualize tumors and vessels



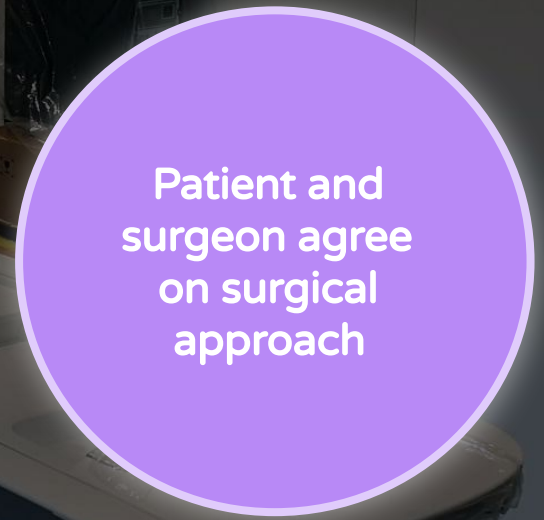
## Avatar Medical

Patient and surgeon assess location and size of tumor vessels



## Shared Surgical Decision

Patient and surgeon agree on surgical approach



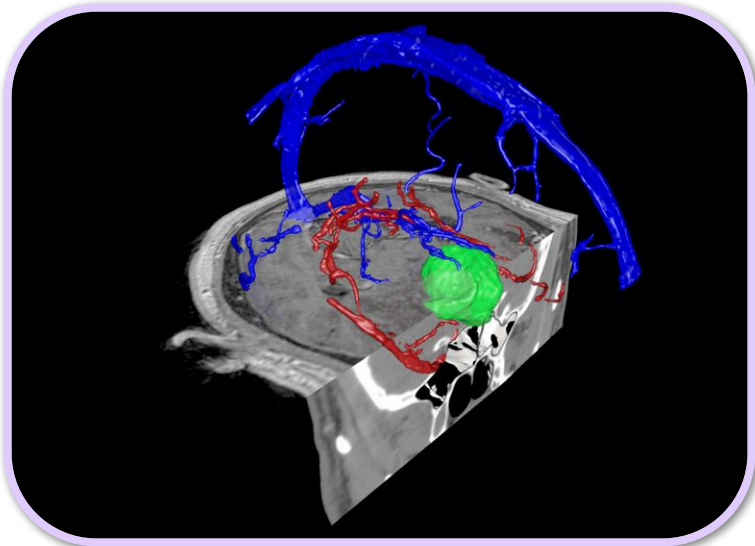




# No Segmentation: Instant, Lossless Visualization

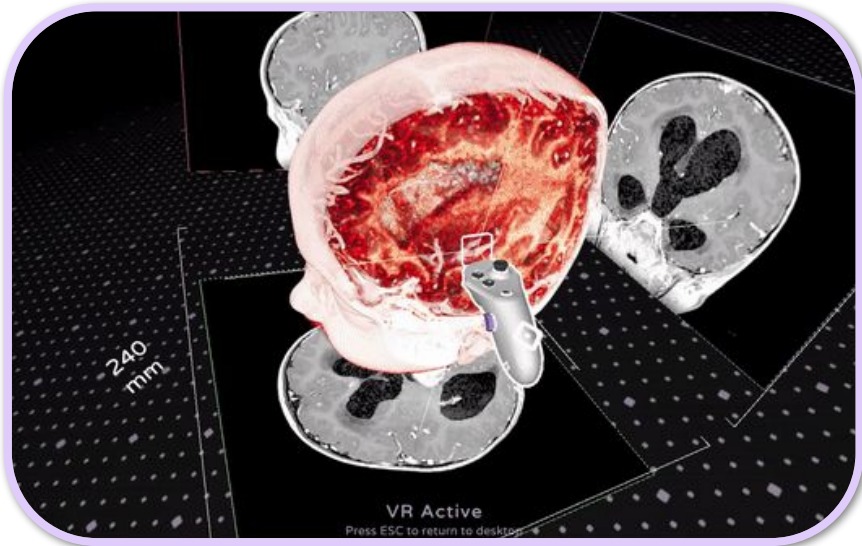
## Competition = Segmentation

- Data loss
- Time consuming pre-treatments
- Disrupt workflow
- Does not scale



## Avatar Medical

- All fine structures are visible
- Real-time
- Smooth workflow integration
- Scalability

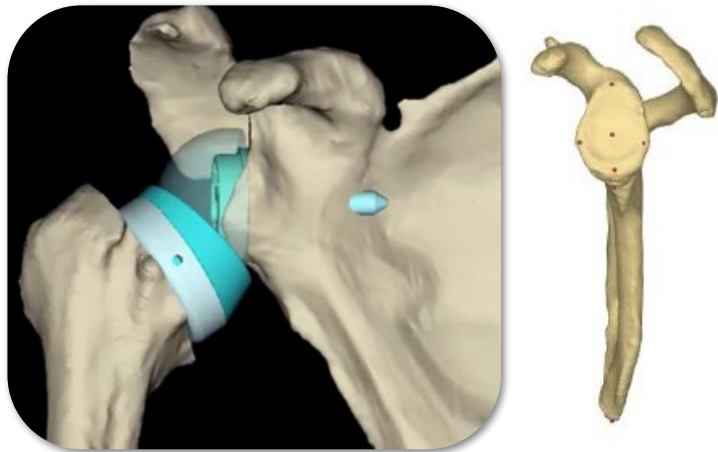




# No Segmentation: Instant, Lossless Visualization

Competition = Segmentation

Bone Segmentation



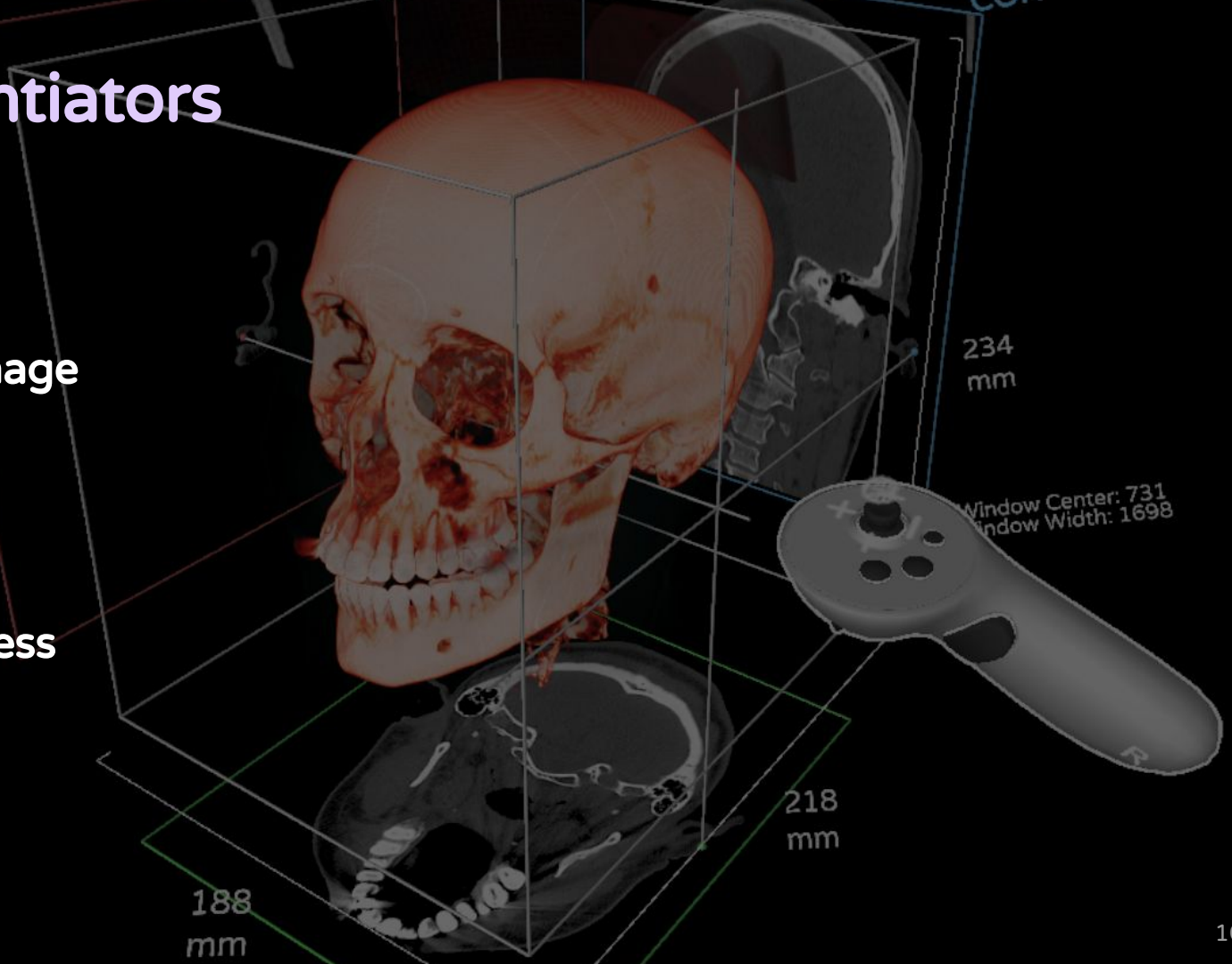
Avatar Medical

Bone & Soft Tissue Visualization



# Key Differentiators

- 1 Exquisite Image Quality
- 2 Scalability
- 3 Immersiveness

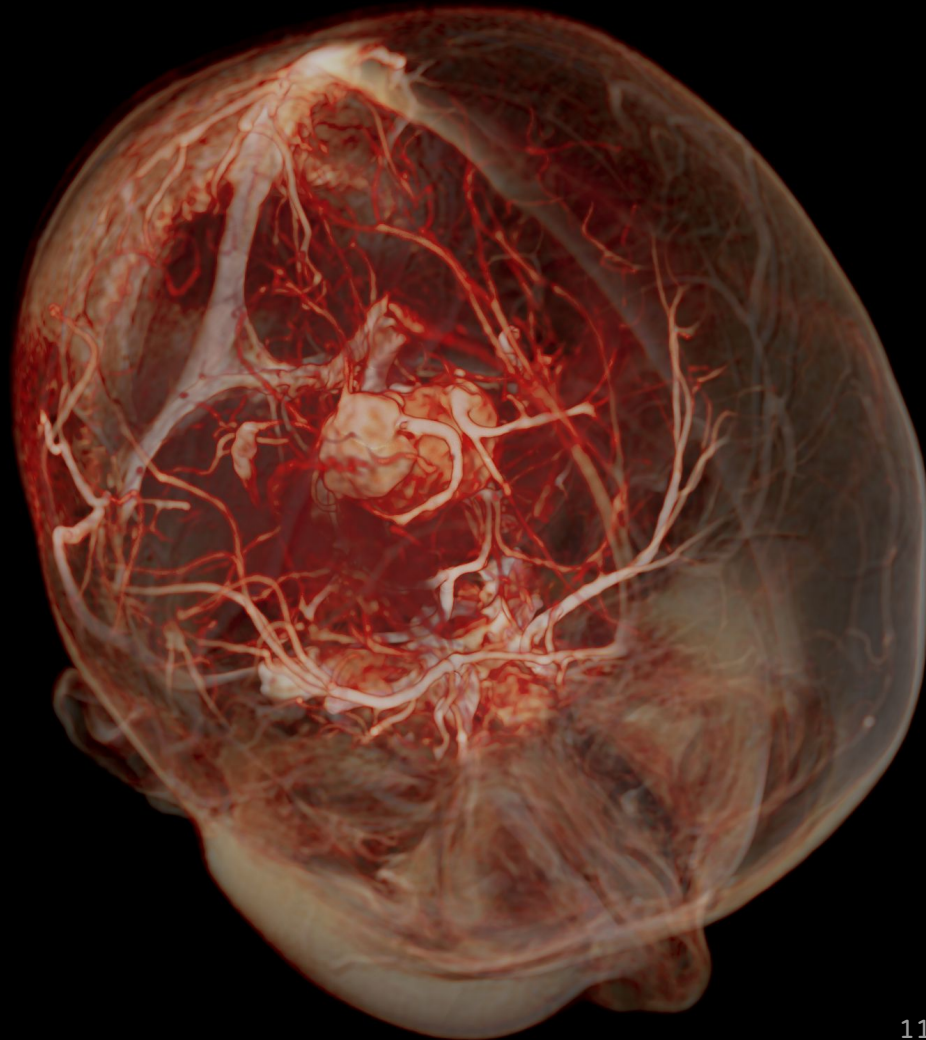


# Our Three Applications

Education

Surgery Planning

Patient Engagement





# Portable Education Content

## Device-Agnostic 3D Medical Image Viewing

- Deploy patient avatars on any mobile device
- Ubiquitous access to education applications
- Partnership with Uptale to deploy education content



Smartphone



Tablet



Desktop

Standalone  
XR





# Go-To-Market for Education

## Targets

Medical, nursing, radiologic technologist, veterinary schools

## Market Size

\$200M worldwide (6,700 schools in the US and in Europe)

## Go-To-Market

Direct sales and resellers, grants

## Deal Size

Recurring \$10K to \$100K

## Sales Cycle

3–12 months

## 10 Customers

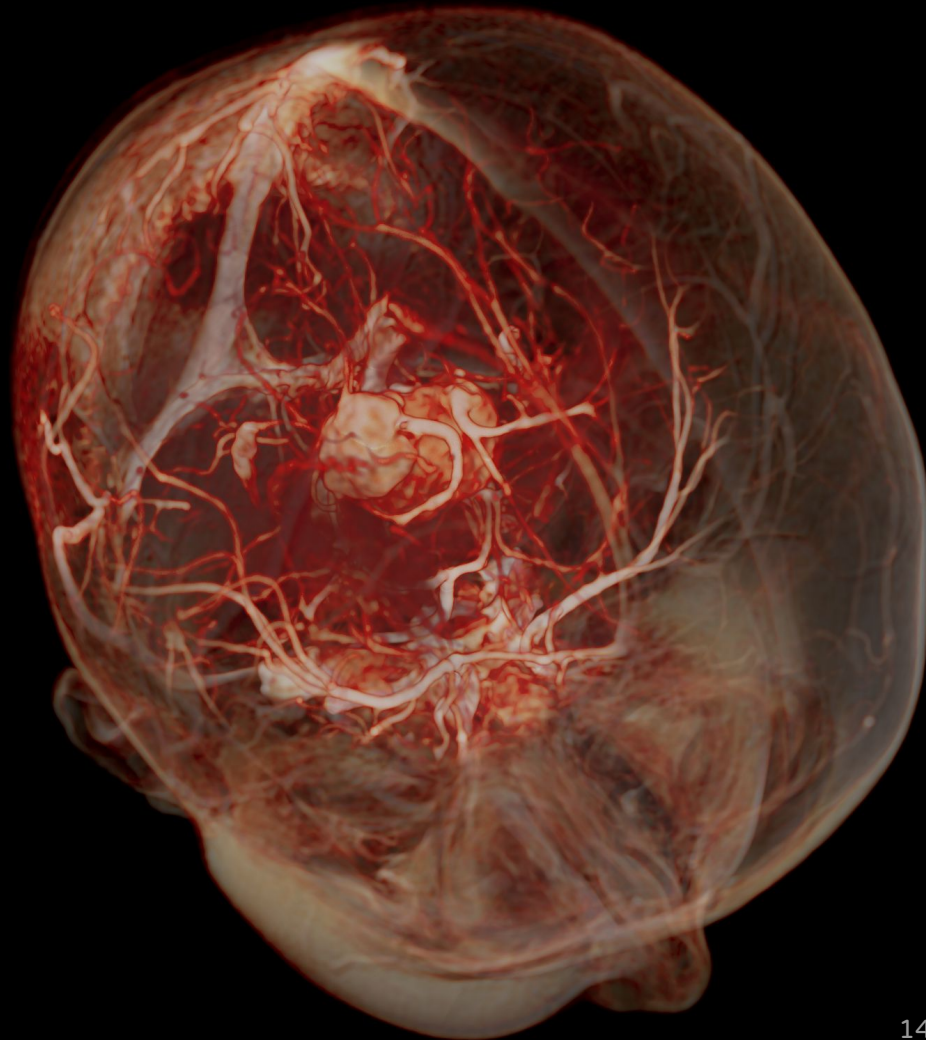


# Our Three Applications

Education

**Surgery Planning**

Patient Engagement



# Plan Surgeries with Avatar Medical Vision



**FDA-Cleared Surgery Planning Solution  
CE Marking Expected in Early 2025**



**Change surgical approach\***



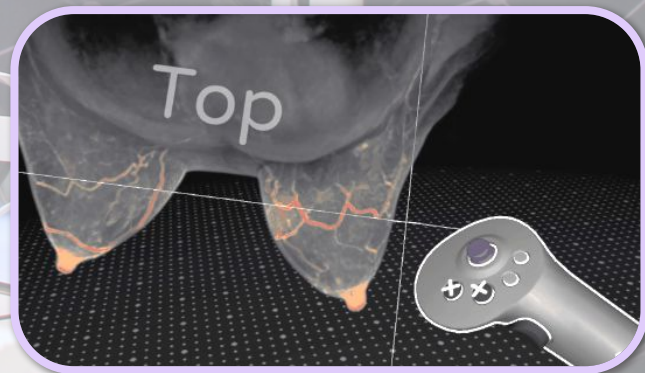
**Faster in analyzing medical  
images\*\***



## Customers



## Research Partners



\* Survey of vascular surgeons at Marie Lannelongue Hospital

\*\* Based on evaluations of 18 surgeons and 90 MRI sequences in El Beheiry, et al. *JCO Clinical Informatics*, 2021

# Go-To-Market for Surgery Planning

## Targets

Medtech companies

## Market Size

Hundreds of millions of dollars

## Go-To-Market

Form Strategic Partnerships with medtech companies  
Develop Tailored Applications

## Deal Size

Minimum of \$5M (to much more)

## Sales Cycle

18 months

## 1 Customers





# FX Shoulder Deal



Shoulder Solutions



Company Profile

\$50M growth rate 25%  
500 surgeons

Application

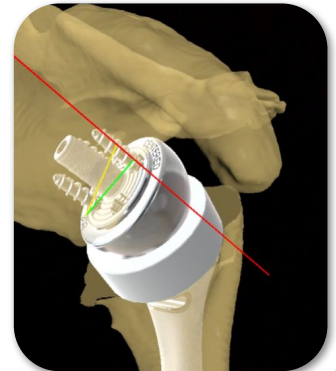
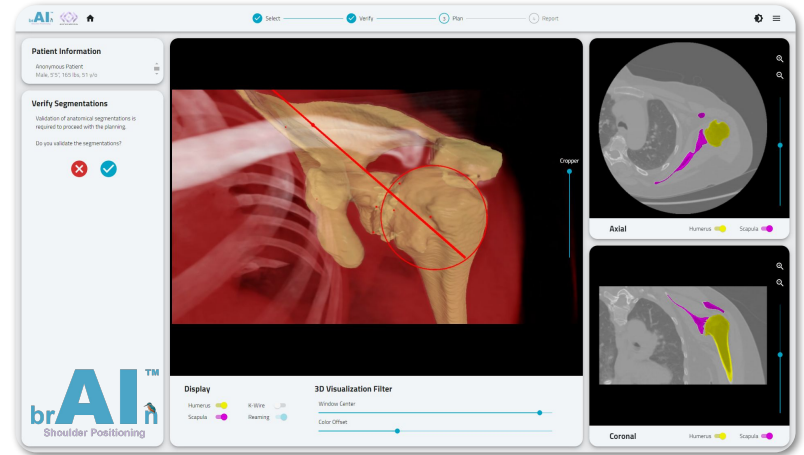
Shoulder Surgery Planning Software

FX Customers



Deal

NRE \$1M  
Recurring Pricing \$100 to \$300/planning  
2026 Revenue projection = \$1M

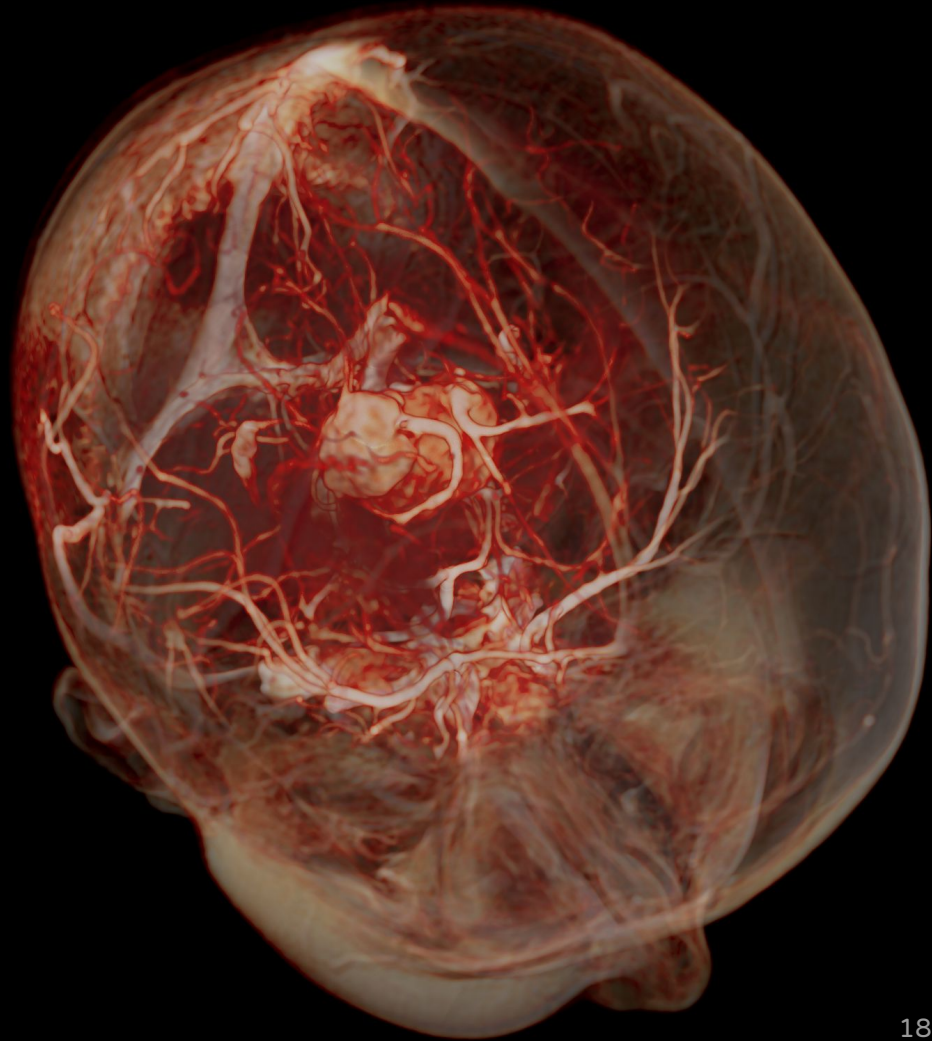


# Our Three Applications

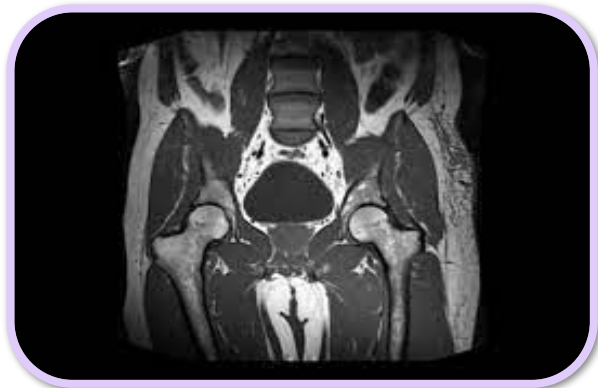
Education

Surgery Planning

Patient Engagement



# Problem: Patient Outmigration



## Current Limitations

Patients and surgeons restricted to 2D medical images

## Impact

Limited patient understanding, driving demand for second opinions

## Consequence

Hospitals outmigration and revenue loss

# Patient Engagement with Avatar Medical Vision



Increase patient understanding & satisfaction



Boost conversion rate



Grow Hospital Revenue



# Landmark Study in Neurosurgery

RESEARCH—HUMAN—CLINICAL STUDIES

## Impact of Neurosurgical Consultation With 360-Degree Virtual Reality Technology on Patient Engagement and Satisfaction

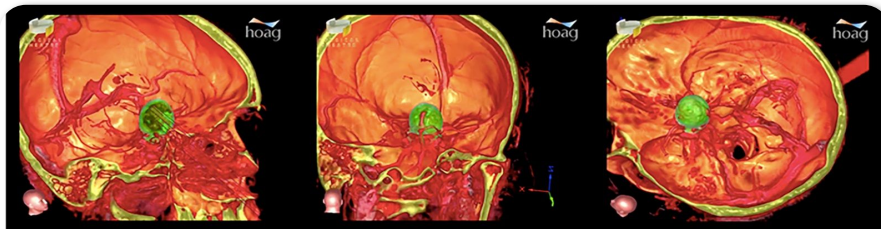
Robert Louis, MD,<sup>\*†</sup> Jeanine Cagigas, MS,<sup>\*†</sup> Michael Brant-Zawadzki, MD,<sup>‡</sup> Michael Ricks, MHA<sup>‡</sup>

<sup>\*</sup>The Brain and Spine Center at Hoag, Newport Beach, California; <sup>†</sup>Pickup Family Neurosciences Institute, Hoag Memorial Hospital Presbyterian Newport Beach, Newport Beach, California

**Correspondence:** Robert Louis, MD, The Brain and Spine Center at Hoag, 3900 West Coast Hwy, Suite 300, Newport Beach, CA 92663, USA. Email: [rlouismd@yahoo.com](mailto:rlouismd@yahoo.com)

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Group	Surgical Candidates	Conversion Rate	Outmigration Rate
Pre-VR	80	64%	36%
Post-VR, Not Patient-Specific	93	82%	18%
Post-VR, Patient-Specific	84	96%	4%



Procedure conversion rate increased from 64% → 96%

# Landmark Study in Neurosurgery

STRUCTURAL HEART  
2020, VOL. 4, NO. 3, 230-235  
<https://doi.org/10.1080/24748706.2020.1748776>



## ORIGINAL RESEARCH



### 360-Degree Virtual Reality Consultation for the Structural Heart Disease Patient

Jorge M. Castellanos, MD, MPP, FACC<sup>a,b</sup>, Alex Yefimov, BS<sup>c</sup>, and Phuong N. Dang, PhD<sup>c</sup>

<sup>a</sup>Newport Heart Medical Group, Newport Beach, California, USA; <sup>b</sup>Cardiology, Hoag Memorial Hospital Presbyterian, Newport Beach, California, USA; <sup>c</sup>Surgical Theater, Cleveland, Ohio, USA

#### ABSTRACT

**Background:** Given the need to improve upon physician-patient communication, we employed a 360-degree Virtual Reality (360°VR) visualization platform for face-to-face consultations for TAVR and LAO procedures. The platform creates patient-specific 360°VR models from volumetric scans (e.g., CT, MRI) that can be manipulated and viewed from any angle.

**Methods:** Forty-six patients were prospectively surveyed regarding their 360°VR consultation experience for aortic valve stenosis and atrial fibrillation. For each patient, a custom 360°VR model was created from their high-resolution CT scans using Precision VR<sup>®</sup> by Surgical Theater and utilized during the 360°VR consultation. The proposed procedure was simulated in VR to show the interaction of the specific implant with the patient's anatomy. Patient conversion rate was also evaluated.



Procedure conversion rates  
increased from 68% → 92%

**Table 4.** Procedure conversion rates for TAVR and Watchman after consultations with and without 360°VR.

Recommended Procedure	Without 360°VR		With 360°VR	
	# of Consultations	Conversion Rate	# of Consultations	Conversion Rate
TAVR	57	86%	41	100%
Watchman	52	68%	13	92%

# Results of Pilot Study



**Dr Jaime Nieto, MD, MBA, MS**  
Chief of Neurosurgery

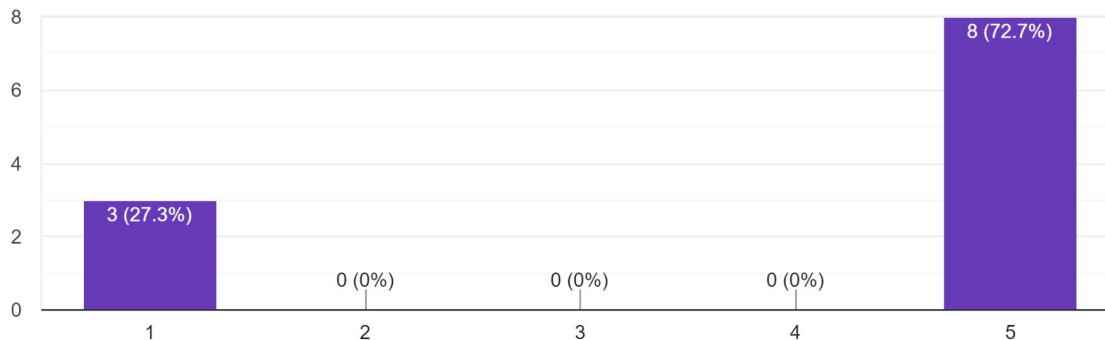


**“The first three patients all scheduled a surgery... this is very rare for Dr Nieto”**

– Clinical Head, working with Dr Nieto for the past 10 years

I am confident in Dr. Nieto's surgical plan and have chosen to move forward with my surgery under his care.

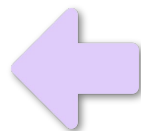
11 responses



# A Direct Impact on Hospital Top-Line

Top 2 Highest Volume Procedures	CPT Codes	Hospital Outpatient Fee Average in NY
Anterior Cervical Discectomy and Fusion (ACDF) (Outpatient)	<a href="#">22551 + 22845 + 22859 + 20938</a>	\$36,498
Lumbar Spine Fusion (Outpatient)	<a href="#">22840 + 22859 + 22558</a>	\$51,332
average fee		<b>\$43,915</b>

Net additional Surgical Procedure	
1/ week	\$43,915
50/year	<b>\$2,195,750</b>



**Huge Value to Cost Ratio**



# Go-To-Market for Patient Engagement

## Targets

Large Metropolitan Hospitals

## Market Size

\$3 Billion in the USA

## Go-To-Market

Direct contact → sales through large resellers (ePlus)  
Beach head strategy

## Deal Size

Recurring \$100K to \$2M - Margin 86%

## Sales Cycle

12 months

## Ongoing Pilots



KAISER  
PERMANENTE



Northwell  
Health



UHealth  
UNIVERSITY OF MIAMI HEALTH SYSTEM

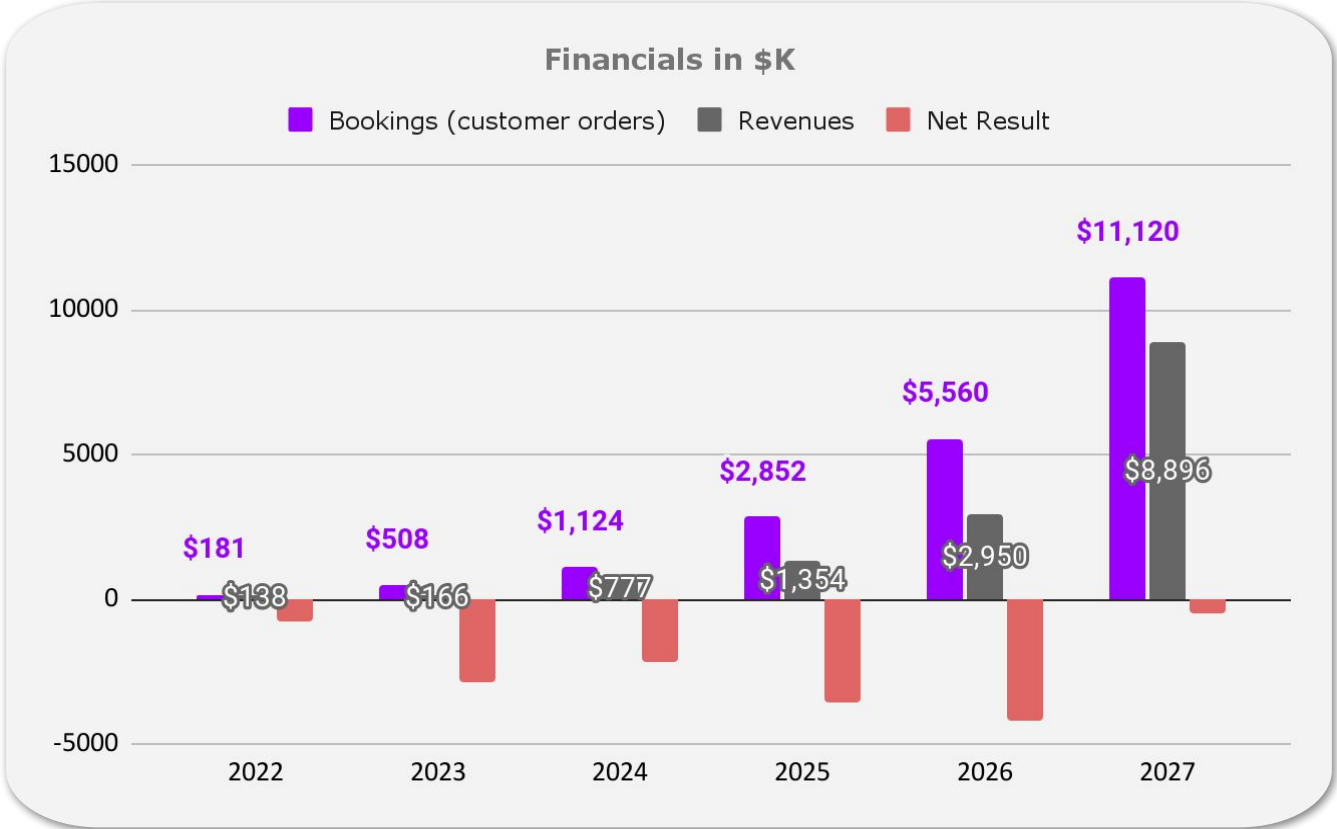


American  
Hospital  
of Paris



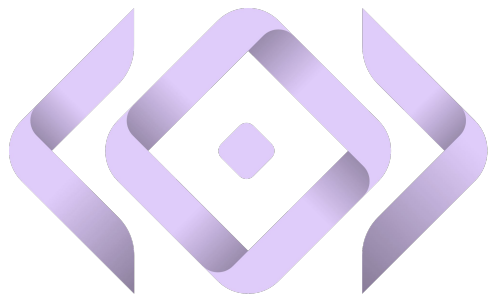
# Financials & Conclusion

# In 5 Years: A Sustainable and Attractive Business



# Key Points

- Disruptive patented technology and solution
- Seasoned team
- Proven Go-to-Market strategy in education
- \$3B hospital market primed for disruption
- Exit opportunities through strategic partnerships with Medtech companies



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