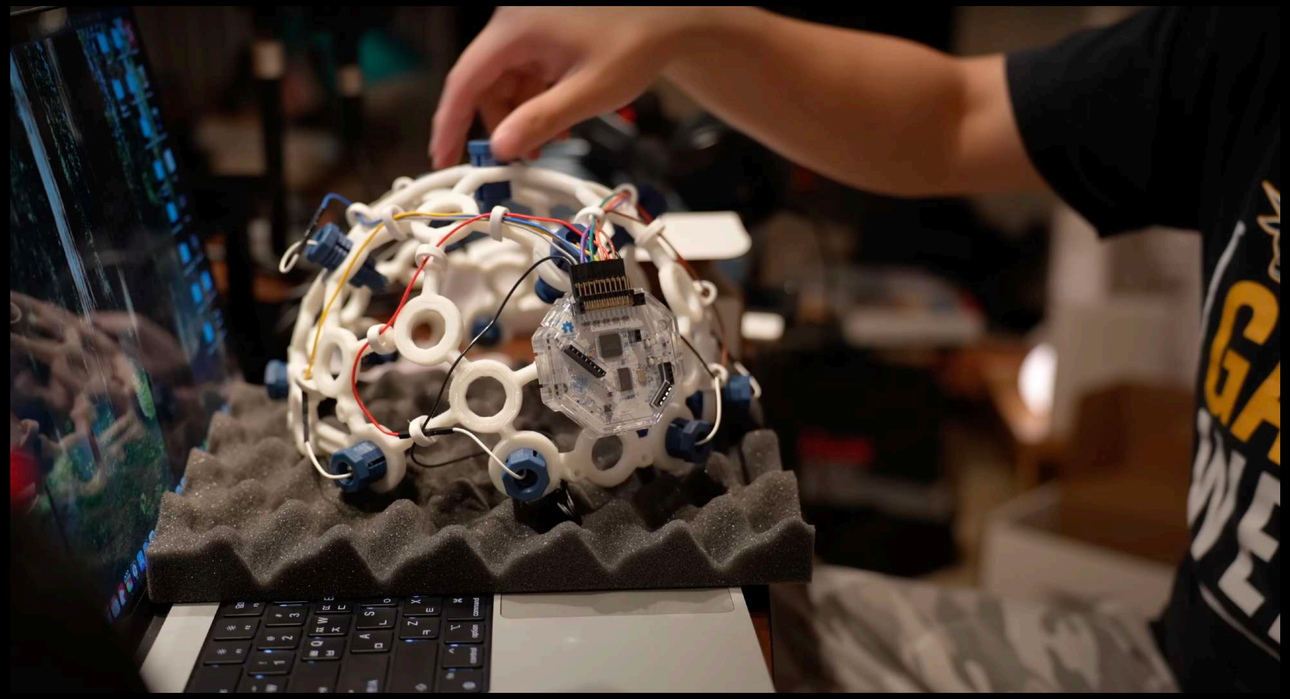


BCI for Aircraft Controls

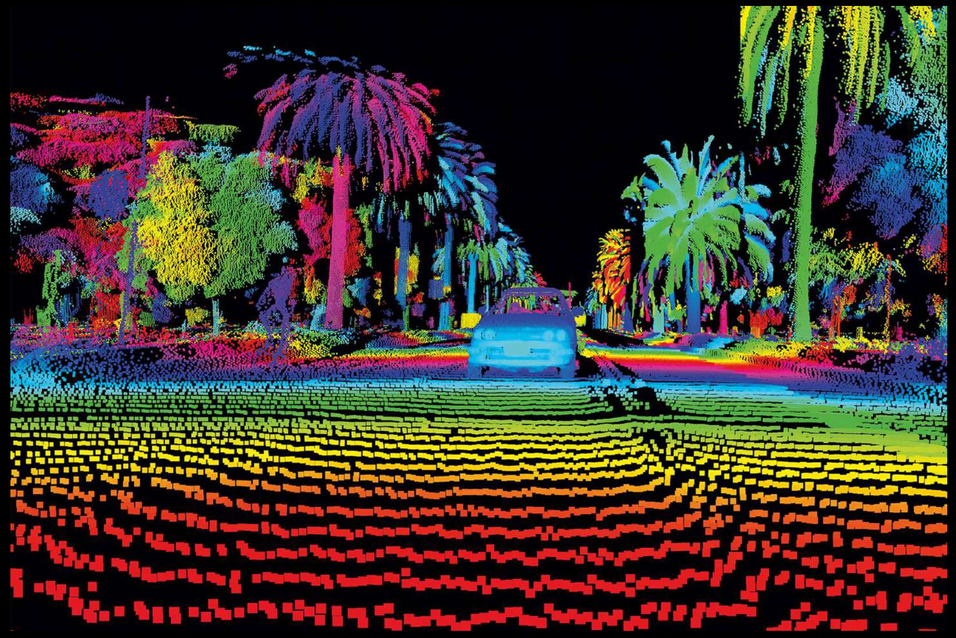
Orchestr, Inc. Investor Relations

Presenter John Seong

Brief Introduction

Technologies We’re Going to Explore Today

- BCI - EEG and EMG Reading and Translating into Aircraft Controls
- 3D Full Head Scan w/ LiDAR and ML based NeRF



My Background

BCI for Aircraft Controls

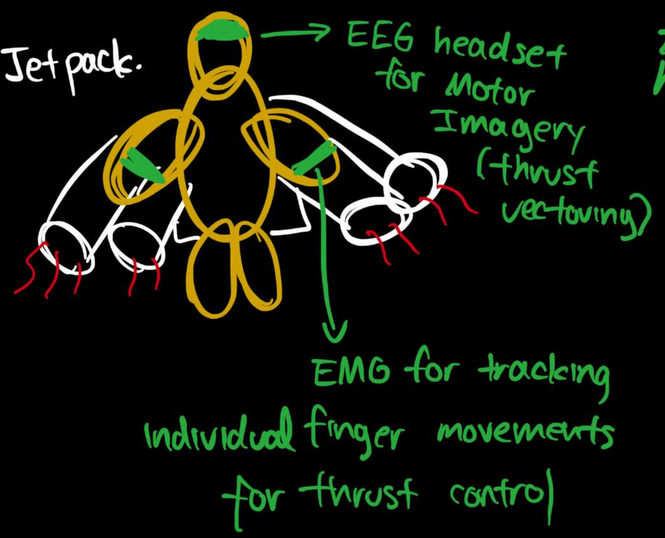
- 2nd Year B.S. Aerospace Engineering with minor in CS
- Currently taking a gap year to pursue entrepreneurship and private pilot license

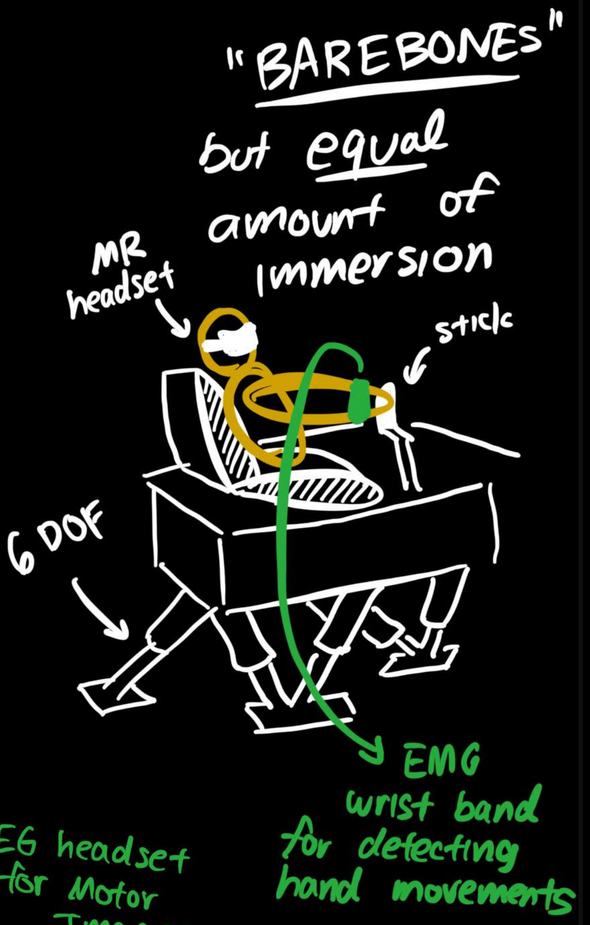
Purpose

BCI for Aircraft Controls

- Near-instantaneous access to crucial tasks in aircraft control with minimal latency
- Low cost solution for training pilots (Level D Simulators typically priced at a range between $5 million and $15 million)

Level D simulator

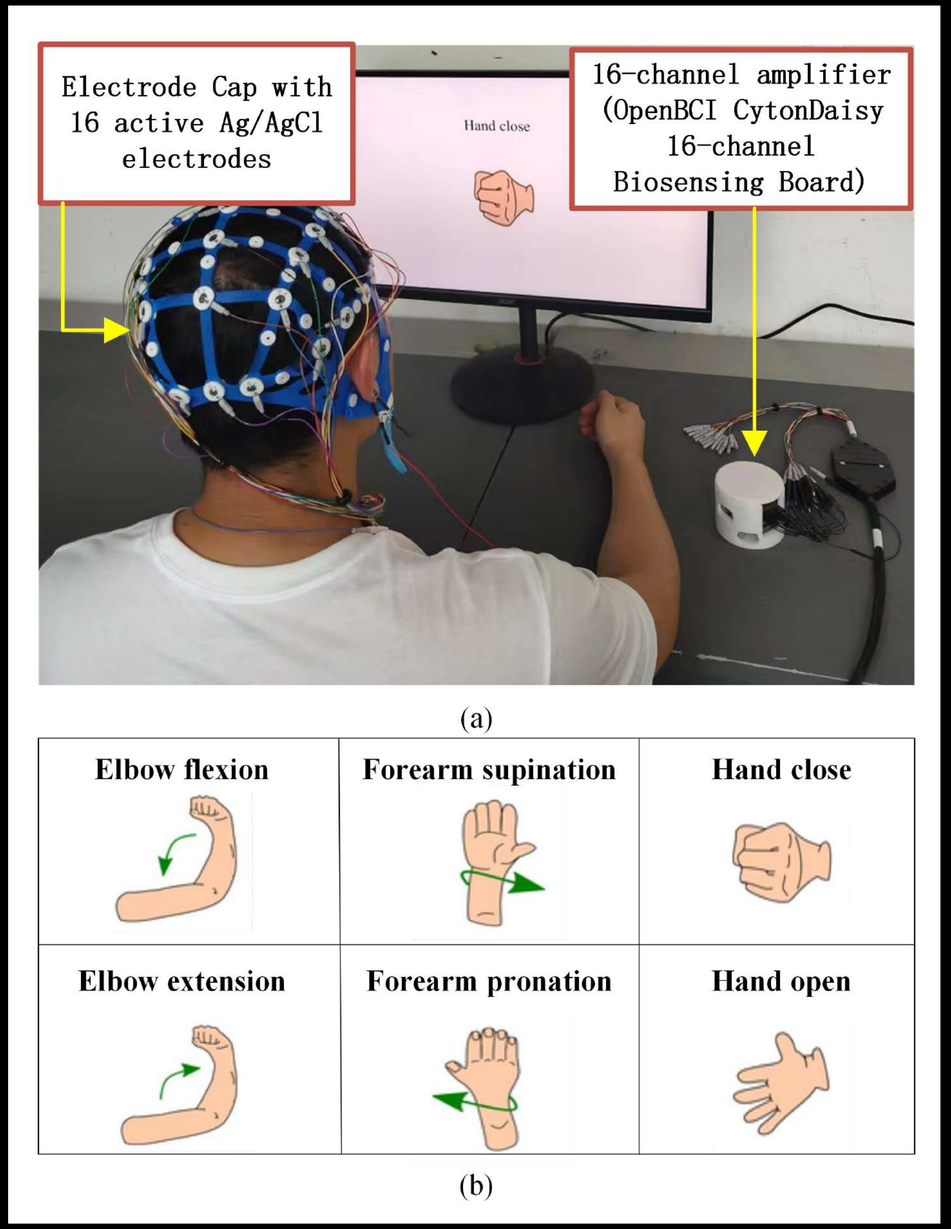




Method

BCI for Aircraft Controls

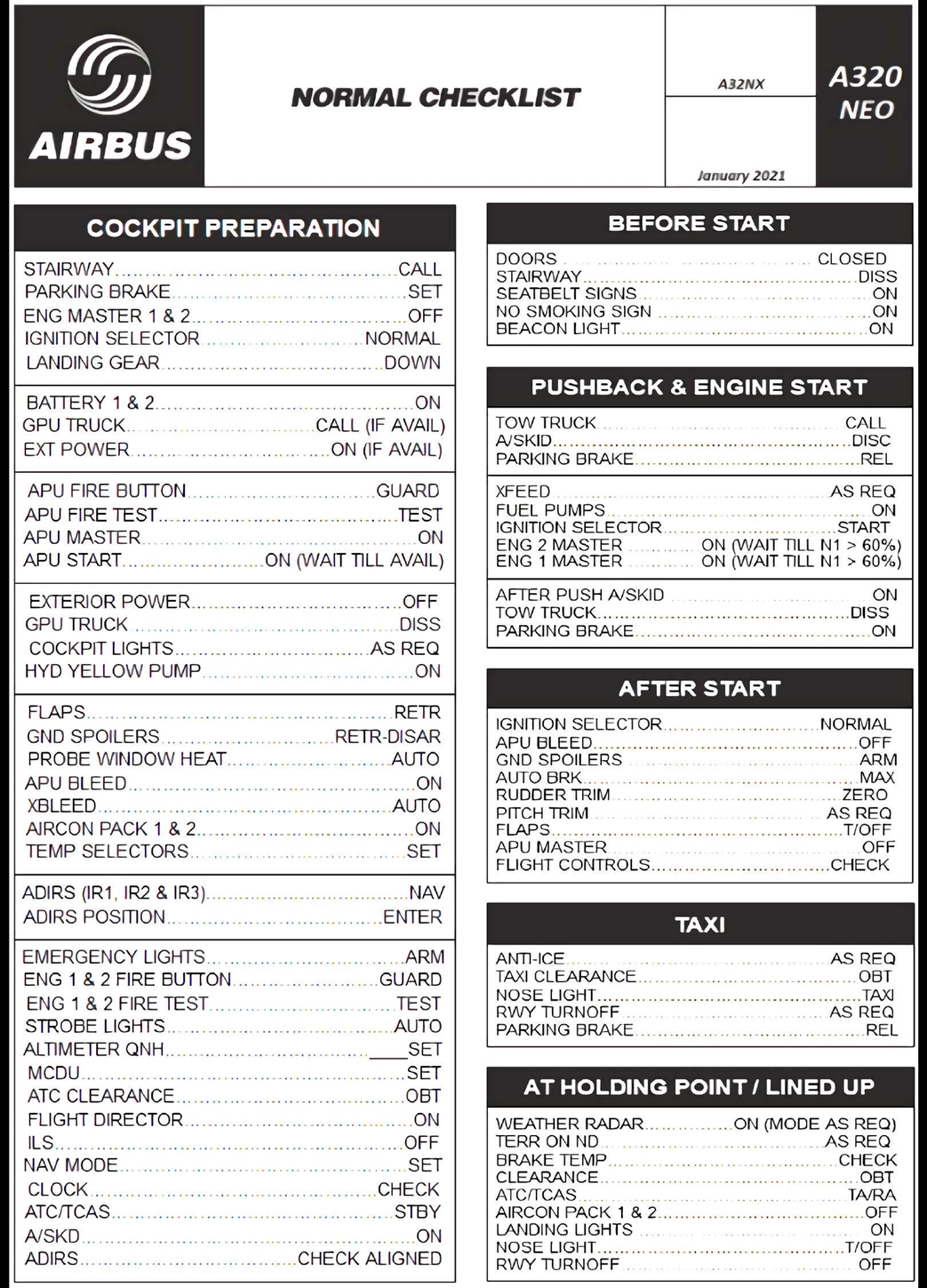
- EEG Motor Imagery
- EMG Wrist Band



Milestones

BCI for Aircraft Controls

- Use EMG to automate common but non-life depending tasks such as radio frequency change (simulating the knob control)
- Start delegating more crucial controls to EEG/EMG devices



AIRBUS

NORMAL CHECKLIST

A32NX

January 2021

A320 NEO

COCKPIT PREPARATION

STAIRWAY	CALL
PARKING BRAKE	SET
ENG MASTER 1 & 2	OFF
IGNITION SELECTOR	NORMAL
LANDING GEAR	DOWN
BATTERY 1 & 2	ON
GPU TRUCK	CALL (IF AVAIL)
EXT POWER	ON (IF AVAIL)
APU FIRE BUTTON	GUARD
APU FIRE TEST	TEST
APU MASTER	ON
APU START	ON (WAIT TILL AVAIL)
EXTERIOR POWER	OFF
GPU TRUCK	DISS
COCKPIT LIGHTS	AS REQ
HYD YELLOW PUMP	ON
FLAPS	RETR
GND SPOILERS	RETR-DISAR
PROBE WINDOW HEAT	AUTO
APU BLEED	ON
XBLEED	AUTO
AIRCON PACK 1 & 2	ON
TEMP SELECTORS	SET
ADIRS (IR1, IR2 & IR3)	NAV
ADIRS POSITION	ENTER
EMERGENCY LIGHTS	ARM
ENG 1 & 2 FIRE BUTTON	GUARD
ENG 1 & 2 FIRE TEST	TEST
STROBE LIGHTS	AUTO
ALTIMETER QNH	____SET
MCDU	SET
ATC CLEARANCE	OBT
FLIGHT DIRECTOR	ON
ILS	OFF
NAV MODE	SET
CLOCK	CHECK
ATC/TCAS	STBY
A/SKD	ON
ADIRS	CHECK ALIGNED

BEFORE START

DOORS	CLOSED
STAIRWAY	DISS
SEATBELT SIGNS	ON
NO SMOKING SIGN	ON
BEACON LIGHT	ON

PUSHBACK & ENGINE START

TOW TRUCK	CALL
A/SKID	DISC
PARKING BRAKE	REL
XFEED	AS REQ
FUEL PUMPS	ON
IGNITION SELECTOR	START
ENG 2 MASTER	ON (WAIT TILL N1 > 60%)
ENG 1 MASTER	ON (WAIT TILL N1 > 60%)
AFTER PUSH A/SKID	ON
TOW TRUCK	DISS
PARKING BRAKE	ON

AFTER START

IGNITION SELECTOR	NORMAL
APU BLEED	OFF
GND SPOILERS	ARM
AUTO BRK	MAX
RUDDER TRIM	ZERO
PITCH TRIM	AS REQ
FLAPS	T/OFF
APU MASTER	OFF
FLIGHT CONTROLS	CHECK

TAXI

ANTI-ICE	AS REQ
TAXI CLEARANCE	OBT
NOSE LIGHT	TAXI
RWY TURNOFF	AS REQ
PARKING BRAKE	REL

AT HOLDING POINT / LINED UP

WEATHER RADAR	ON (MODE AS REQ)
TERR ON ND	AS REQ
BRAKE TEMP	CHECK
CLEARANCE	OBT
ATC/TCAS	TA/RA
AIRCON PACK 1 & 2	OFF
LANDING LIGHTS	ON
NOSE LIGHT	T/OFF
RWY TURNOFF	OFF

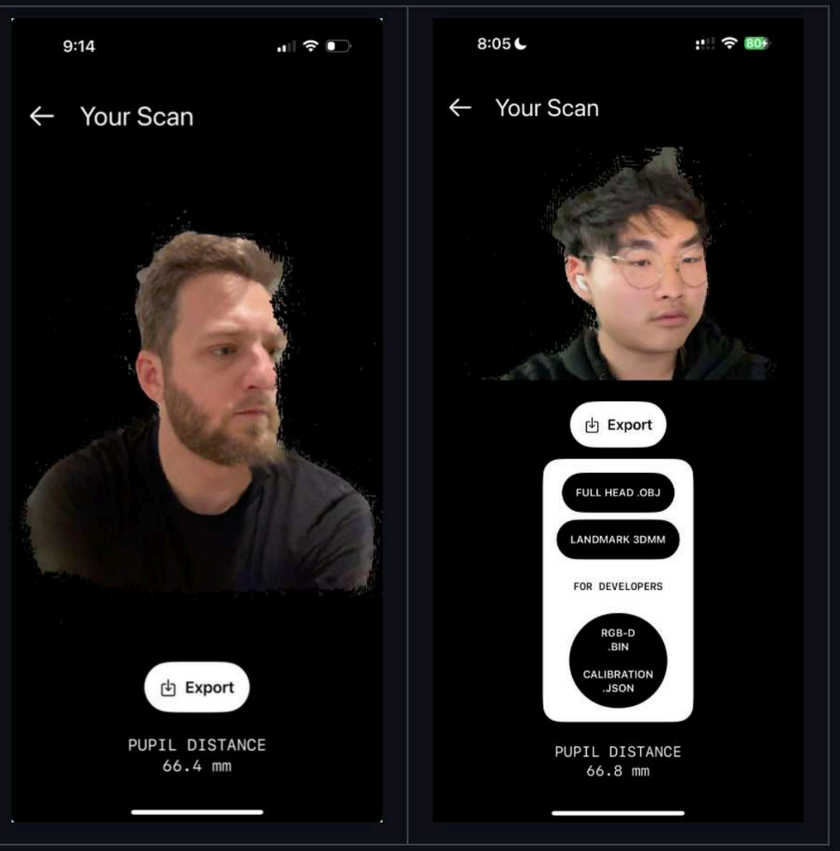
3D Scan Technology

Using iPhone’s TrueDepth and LiDAR sensors

Vision-only method - NeRF (ML based, fast processing time, in development)

OpticALLY-iOS

OpticALLY 3D Capture is an iOS app that can scan user's faces by leveraging iPhone's TrueDepth cameras, designed for bespoke eyeglasses. Supports full point cloud registration and meshing with camera stationary but only the face moving — something the industry has never seen before.



Market Size

Honeywell

GARMIN™

RTX

91.32 billion for avionics hardware

Avionics Market Size, Share & Industry Analysis, By System (Hardware and Software), Platform (Commercial, Military, Business Jets, and General Aviation), End-Use (OEM and Aftermarket), and Regional Forecast, 2024-2032

Last Updated: October 28, 2024 | Format: PDF | Report ID: FBI101819 Share

Summary | TOC | Segmentation | Methodology | Infographics | Request Sample PDF

KEY MARKET INSIGHTS

Listen to Audio Version

The global avionics market size was valued at USD 91.32 billion in 2023 and is projected to grow from USD 99.33 billion in 2024 to USD 179.44 billion by 2032, exhibiting a CAGR of 7.67% during the forecast period. North America dominated the avionics market with a market share of 37.25% in 2023.

4.89 million for simulators

Flight Simulator Market Size, Share, & Industry Analysis, By Type (Full Flight Simulator and Flight Training Devices), By Platform (Fixed Wing Simulator, Rotary Wing Simulator, and UAV Simulator), By Application (Commercial and Military), and Regional Forecast, 2024-2032

Last Updated: October 28, 2024 | Format: PDF | Report ID: FBI102592 Share

Summary | TOC | Segmentation | Methodology | Infographics | Request Sample PDF

KEY MARKET INSIGHTS

Listen to Audio Version

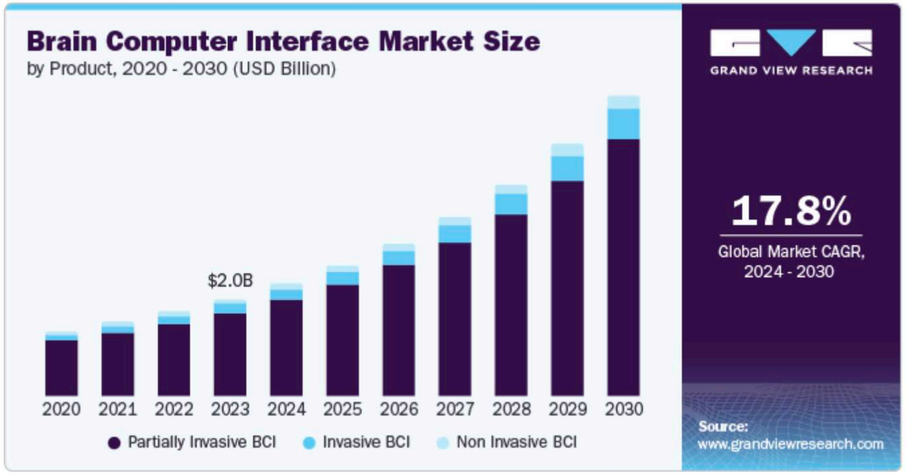
The global flight simulator market size was valued at USD 4.89 billion in 2023. The market is projected to grow from USD 5.48 billion in 2024 to USD 7.83 billion by 2032, exhibiting a CAGR of 4.55% during the forecast period. North America dominated the flight simulator market with a market share of 35.99% in 2023.

Brain Computer Interface Market Size, Share & Trends Analysis Report By Product (Invasive, Non-invasive), By Application (Healthcare, Communication & Control), By End Use, By Region, And Segment Forecasts, 2024 - 2030

Report ID: 978-1-68038-459-8 | Number of Report Pages: 150 | Format: PDF, Horizon Databook
Historical Range: 2018 - 2023 | Forecast Period: 2024 - 2030 | Industry: Healthcare

Brain Computer Interface Market Trends

The global brain computer interface market size was estimated at USD 2.0 billion in 2023 and is projected to grow at a CAGR of 17.8% from 2024 to 2030. Key market drivers include the increasing prevalence of conditions requiring neuroprosthetics devices, the rising global geriatric population base, and technological developments facilitating communication and movement in paralytic patients.



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johnseong@havit.space

the “number one edge of a startup” compared with large corporations is “the ability to react to how fast technology is moving with speed.”

- sam altman