

# Ian Dos Reis e Aragão

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Sao Paulo, SP, Brazil, Rua Machado Bittencourt

## EDUCATION BACKGROUND

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**Bachelor's and Degree** in Information Systems, 2019 (GPA 3.50)  
The Higher School of Advertising and Marketing (ESPM), Sao Paulo, SP, Brazil

## PROFESSIONAL EXPERIENCE

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**Entrepreneur Leadership** (08/2018 – 02/2022)  
Intelligent Architecture arq|int / Construction / Architecture / Real State / Technology - Sao Paulo, SP, Brazil

- Founding Partner and Lead Developer at ArqInt, spearheading entrepreneurial activities and driving technological innovation.
- Innovated business processes by integrating advanced technologies, improving operational efficiency and client engagement.
- Developed scalable business strategies, resulting in a 30% increase in client acquisition and retention.
- Conducted comprehensive market analysis, identifying customer pain points and tailoring VR solutions accordingly.
- Presented VR solutions at industry conferences, increasing brand visibility and attracting investment opportunities.
- Established strategic partnerships with furniture companies, integrating virtual staging into VR environments and boosting sales.
- Reduced natural resource waste by eliminating physical showrooms, contributing to sustainability and cost savings.
- Achieved recognition in national and international entrepreneurship competitions, showcasing technological advancements, innovation potential, and a commitment to sustainability.

**Virtual Reality Development** (08/2018 – 02/2022)  
Intelligent Architecture arq|int / Construction + Architecture / Real State / Technology - Sao Paulo, SP, Brazil

- Spearheaded the development of advanced Virtual Reality software, revolutionizing the real estate sales process.
- Created immersive virtual experiences, allowing potential buyers to explore properties in a realistic and interactive environment.
- Enhanced client presentations and sales pitches with interactive VR demonstrations, leading to increased client satisfaction and sales conversion rates.
- Managed a cross-functional team to create immersive VR environments, driving a 30% increase in client acquisition and retention.
- Conducted rigorous testing and quality assurance to ensure VR environments met high standards of realism and interactivity.
- Authored detailed technical documentation and user guides, facilitating seamless client training and adoption.
- Transformed architectural designs into high-definition VR simulations using Unreal Engine, streamlining the sales process and setting new industry standards.

## RESEARCH EXPERIENCE

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### **The Development of an Anthropomorphic Mechanical Arm**

(01/2018 – 10/2019)

Scientific Initiation Project, Advisor Ph.D. Humberto Sandmann

The Higher School of Advertising and Marketing (ESPM), Sao Paulo, SP, Brazil

- Conducted exploratory research into low-cost assistive technology integrating neuroscience, robotics, and HCI.
- Designed and built a functional anthropomorphic arm prototype using 3D-printed components and servo motors.
- Implemented real-time signal interpretation algorithms with Arduino to convert EMG inputs from Myo Armband into motion.
- Developed a companion Android application for gesture-based wireless control of the arm via Bluetooth.
- Integrated calibration settings and real-time feedback into the mobile app to enhance user experience and accessibility.
- Addressed latency and gesture differentiation challenges to enhance signal accuracy and mechanical responsiveness.
- Findings contributed to discussions on digital accessibility and were showcased at the 8th SEMIC conference.

### **Virtual Reality Project**

(08/2018 – 06/2019)

Undergraduate Final Project, Advisor Master. Mauricio Pimentel

The Higher School of Advertising and Marketing (ESPM), Sao Paulo, SP, Brazil

- Pioneered a virtual property presentation tool blending real estate marketing with immersive VR simulations.
- Utilized Unreal Engine to develop interactive walk-through environments with responsive design elements.
- Incorporated consumer behavior insights to tailor UX flow, improving information retention and decision-making.
- Insights from this thesis directly contributed to the formation of the startup *Intelligent Architecture (arq/int)*.

### **Brain-Computer Interface: A New Frontier for Human-Machine Interactions**

(01/2017 – 12/2017)

Scientific Initiation Project, Advisor Ph.D. Humberto Sandmann

The Higher School of Advertising and Marketing (ESPM), Sao Paulo, SP, Brazil

- Developed a proof-of-concept smart home platform using muscle-based signal inputs for controlling connected devices.
- Built a custom Android app that enabled wireless control of lights and electronics using EMG and gesture recognition.

- Designed calibration features and real-time feedback to personalize user interaction based on signal response.
- Mapped UX architecture based on HCI principles, focusing on intuitive interaction for users with mobility limitations.
- Integrated Bluetooth communication between Myo Armband, Arduino-based IoT devices, and mobile interface.
- Presented findings at the 7th SEMIC academic forum, focusing on HCI usability for individuals with reduced mobility.

## **ACADEMIC APPOINTMENTS**

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### **Undergraduate Research Projects (Scientific Initiation)**

(01/2017 – 10/2019)

The Higher School of Advertising and Marketing (ESPM), Sao Paulo, SP, Brazil

- Published research findings in well-regarded scientific journals, contributing to the university's academic prestige and influence.
- Received recognition and awards for outstanding research contributions, highlighting the university's commitment to academic excellence.
- Organized and led research seminars and workshops, increasing student engagement and participation in academic research.

### **Virtual Reality Room Project**

(02/2018 – 06/2019)

The Higher School of Advertising and Marketing (ESPM), Sao Paulo, SP, Brazil

- Designed and developed a state-of-the-art Virtual Reality Room students utilize for immersive learning experiences.
- Leveraged advanced VR technologies to create interactive and engaging educational simulations.
- Facilitated the adoption of VR in educational settings, significantly improving student engagement and learning outcomes.

### **Power Lab Initiative**

(02/2017 – 12/2017)

The Higher School of Advertising and Marketing (ESPM), Sao Paulo, SP, Brazil

- Established Power Lab for hands-on learning and experimentation for undergraduate researchers.
- Equipped the lab with advanced tools and technologies to support student projects and research initiatives.
- Fostered an environment of experimentation and discovery, contributing to the academic growth of students and researchers

## **LABORATORY TECHNIQUES**

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- **Programming & Software Development:** Proficiency in Java, Python, C/C++; develop, test, and deploy robust software applications; design web solutions with HTML, CSS, JavaScript, React, and Angular; create mobile applications for Android platforms.
- **Game Engine & VR Development:** Engineer interactive games using game engines; engineer interactive, immersive VR environments, creating experiences for educational and practical applications.
- **Cybersecurity & Network Administration:** Configure and manage network infrastructure; implement cybersecurity protocols; conduct penetration testing and ethical hacking for security assurance.
- **Human-Computer Interfaces:** Analyze user requirements to design efficient information systems; design user-friendly interfaces through advanced Human-Computer Interfaces (HCI) principles; immerse users in new computer experiences interacting with human senses.
- **IoT & 3D Printing:** Develop IoT applications for home automation and integrate connecting devices to enhance daily routine. Build a 3D-printed arm as a practical application of Arduino for prosthetics studies.
- **AI & Machine Learning:** Apply basic knowledge of machine learning algorithms and AI concepts to enhance software functionality and user experiences.
- **BCI Research & Development:** Lead research and development of Brain-Computer Interface (BCI) systems; utilize EMG to capture and analyze biological signals; process brain signals into actionable information for innovative brain-controlled applications.
- **Assistive & Cost-Effective Technologies:** Innovate accessibility solutions; research demographics of people with disabilities (PcDs) in Brazil; develop assistive technologies and engineer low-cost solutions to meet diverse needs.
- **Project Management & Proof of Concept Development:** Manage project timelines and deliverables; ensure successful coordination among stakeholders; create proofs of concept to demonstrate feasibility; conduct cross-disciplinary research to drive innovation.

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## SOFTWARES PROFICIENCY

- **Development Tools:** Git, GitHub, GitLab, Visual Studio Code, Eclipse, IntelliJ IDEA.
- **Mobile Development:** Android Studio.
- **Game Development:** Unity, Unreal Engine
- **Virtual Reality:** Unreal Engine VR.
- **IoT Platforms:** Arduino IDE, Raspberry Pi
- **3D Modeling:** Autodesk Maya
- **Graphic Design:** Photoshop, Adobe Illustrator.
- **Cybersecurity Tools:** Wireshark, Kali Linux

## LANGUAGES PROFICIENCY

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- **Portuguese:** Native Fluent.
- **English:** Advance Proficiency.
- **Japanese:** Intermediate Proficiency.
- **Spanish:** Basic Proficiency.

## SCHOLARSHIPS & AWARDS

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<b>Scientific Initiation Research Fellowship</b>	(08/2016 – 06/2019)
Projects and Research Support Office (EPAP) by ESPM, Sao Paulo, SP, Brazil.	
<b>Recipient of the Prestigious Research Excellence Award</b>	(10/2019)
8th Scientific Initiation Seminar (SEMIC) by ESPM, Sao Paulo, SP, Brazil	
<b>First Place at the Entrepreneurship Fair</b>	(09/2018)
XII Entrepreneurship Fair by ESPM, Sao Paulo, SP, Brazil	
<b>Honored with ESPM Business Incubator Grant</b>	(10/2018)
ESPM'S Business Incubator, Sao Paulo, SP, Brazil	
<b>Top 50 Startups in the Country</b>	(05/2019)
University Entrepreneur, Empreenda 2019 by Santander, Sao Paulo, SP, Brazil	
<b>Most Promising Startups</b>	(08/2019)
Nominated by Empreenda as one of the most potential Startups in the country by Santander, Brazil.	
<b>Represent Brazil in Santander X Global</b>	(10/2019)
Represent Brazil in the invitation-only Santander X Global Award by Santander, Brazil.	

## CONFERENCE PARTICIPATION

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*“The Development of an Anthropomorphic Mechanical Arm”*, **Aragão**, Ian D. Reis. 8th Scientific Initiation Seminar of The Higher School of Advertising and Marketing (8th SEMIC-ESPM), Francisco Gracioso Campus, São Paulo – SP, Brazil, October 2019. (Talk and Scientific Conference Proceeding)

*“Brain-Computer Interface: A New Frontier for Human-Machine Interaction”*, **Aragão**, Ian D. Reis. 7th Scientific Initiation Seminar of The Higher School of Advertising and Marketing (7th SEMIC-ESPM), Francisco Gracioso Campus, São Paulo – SP, Brazil, October 2018. (Talk and Scientific Conference Proceeding)

*“Mechanical Arm Demonstration - TECH”*, **Aragão**, Ian D. Reis. DEV<sup>2</sup>, August 2018, ESPM, São Paulo, Brazil. (Talk and Scientific Demonstration)

## PUBLICATIONS

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Aragão, Ian dos Reis e. **“A New Human-Machine Interaction”**. Electronic Resource. (103 p.) Final report of the Scientific Initiation Project The Higher School of Advertising and Marketing (ESPM). Sao Paulo-SP. 2017.

Aragão, Ian dos Reis e. “**Brain-Computer Interface: A New Application for Human-Machine Interaction**” Electronic Resource (16 p.) Article VII Scientific Initiation Seminar ESPM. São Paulo-SP. 2018.

Aragão, Ian Dos Reis e. “**The Development of an Anthropomorphic Mechanical Arm**”. Electronic resource (67 p.) Final report of the Scientific Initiation Project of The Higher School of Advertising and Marketing (ESPM). Sao Paulo-SP. 2019.

Aragão, Ian dos Reis e. “**The Development of an Anthropomorphic Mechanical Arm**”. Electronic Resource (16 p.) Article VIII Scientific Initiation Seminar ESPM. São Paulo-SP. 2019.

Aragão, Ian Dos Reis e. ; Magnani, Carlos A. B. D. ; Martins, Matheus A. ; Prado, Lucas C. ; Basso, Pedro Guilherme M. R. “**Virtual Reality Project**” (*In Portuguese*) Electronic resource (84 p.) Course Conclusion Paper (Graduation Thesis) – The Higher School of Advertising and Marketing (ESPM), Information Systems Course, São Paulo, 2019.

## **INTERNATIONAL EXPERIENCE**

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### **Summer English Course / Cultural Exchange Program**

(07/2013 – 08/2013)

Converse International School of Languages on the campus of Yale University  
Yale University, New Haven, CT 06520, EUA