

Curriculum Vitae

Jovan David Rebolledo Mendez, PhD — AI scientist · neuroscientist · exponential-technology entrepreneur

Okinawa, Japan [linkedin.com/in/jovandavid](https://www.linkedin.com/in/jovandavid) [Contact](#)

AI scientist, multi-startup founder, and exponential-technology strategist with twenty-five years of international experience across artificial intelligence, neuroscience, robotics, and computational biology. I bridge frontier AI research with real-world deployment, and currently develop computational models of the brain for neurodegenerative disease while advising organizations on AI strategy, governance, and responsible AI.

CURRENT RESEARCH

2024 – Present

Computational Models of Parkinson's Disease

[Neural Computation Unit, OIST](#)

Okinawa, Japan

- Developing enhanced network-diffusion models (eNDM) of α -synuclein propagation in the brain, integrating Allen Brain Atlas gene expression with graph-based machine learning across hundreds of brain regions.
- Modeling disease spread in marmoset and human connectomes toward earlier detection and intervention strategies for Parkinson's disease.
- Bridging neuroscience, reinforcement learning, multimodal models, and neuro-sensing to build biologically grounded, interpretable AI for medicine.

Selected Exploratory Directions

Independent & collaborative lines, OIST

Okinawa, Japan

- **Physical reservoir computing** in unconventional materials — exploring the computational potential of nonlinear physical substrates.
- **3D mechanical digital twin of the mouse** — biomechanical and locomotor simulation for behavioral and pharmacological modeling, in collaboration with experimental neuroscience groups.
- **VoxelFold** — an AlphaFold-inspired, voxel-based approach to modeling and reconstructing brain structure across species, enriched with molecular and connectivity features.
- **Manifold-based modeling** — principled, regularization-grounded methods for representing and intervening on neural and dynamical state spaces.
- **Cross-species translational modeling** — testing whether brain models transfer from non-human primates to human clinical data.
- **Cross-disciplinary method transfer** — adapting techniques from astronomy and the physical sciences to neuroscience data problems.

EXPERIENCE

2024 – Present

• 2015 – 2017

Staff Scientist

Okinawa Institute of Science and Technology (OIST)

Okinawa, Japan

- AI models of Parkinson's disease using brain connectomics and graph-based machine learning (current).
- Earlier tenure: built metagenomics pipelines and remote bio-sensor integration platforms for in-situ data collection.

2016 – Present

Director

Exponential Japan

Japan

- Trained executives at SONY and other corporations (including the CEO of SONY Pictures) in exponential innovation and AI strategy.
- Led Japan's Singularity University Global Impact Competition; ran national AI competitions and XPRIZE outreach.
- Built and advised multiple startups; international keynote speaker.

2022 – 2025

Co-Founder

SkySpec — hyperspectral AI for infrastructure & environment

Japan / Australia

- Drove hyperspectral technology for power-infrastructure intelligence, fire detection, oil-spill and ship-behavior analysis using proprietary AI/ML.
- Co-led the team's XPRIZE Wildfire participation, reaching semi-finalist status; directed participation in the UniSA Space Accelerator (Adelaide).

2023 – 2024

Adjunct Senior Industry Fellow

University of South Australia

Adelaide, Australia

- AI for the space industry; thesis supervision and workshops (remote).

2022 – 2023

Senior Advisor, Emerging Technologies (Consulting)

United Nations (OICT / ETL)

New York, USA

- Strategic foresight and digital-transformation advisory; designed specialized seminars on Web3 and quantum computing.

2017 – 2022

Chair for Frontier in AI Education & Researcher

The University of Tokyo — Mechano-Informatics, School of Information Science (AI Center / FAIRE)

Tokyo, Japan

- Built deep-learning pipelines for neuromorphic sensors and hyperspectral imaging (Fujitsu organic-certification project).
- Taught 1,000+ students from undergraduate to PhD; founded the first AI competition at the University of Tokyo and in Japan.
- Filed patents and published peer-reviewed research at the intersection of sensors, AI, and quantum information.

2014 – 2017

Faculty, AI & Robotics (Teaching Fellow)

Singularity University

NASA Ames / Silicon Valley, USA

- Designed and led AI, deep-learning, and robotics courses (including IBM Watson) for top global talent.
- Helped design and develop the core AI technologies behind 50+ startups; collaborated with astronauts Dan Barry and Yvonne Cagle at NASA Ames.

2010 – 2013

Postdoctoral Associate, Brain Sciences & Bioinformatics

University of Louisville

Kentucky, USA

- Computational methods for animal genome mapping; identified miR–mRNA relationships, yielding international publications.

SELECTED VENTURES & ADVISORY ROLES

- › **Smartstorify** — Chief Science Officer, Co-Founder · AI-driven data compliance & security (2024–2025)
- › **AffectSense** — Co-Founder, Advisory · emotion-AI IP & strategy, Mexico/USA
- › **ExO Works** — Certified ExO Consultant · exponential-organization transformation
- › **Tactile Analogics LLC** — Chief Technical Advisor · human–machine "wixel" interfaces (Vogt Award, 2013)
- › **Rebotechnologies** — Co-Founder, Director · R&D & deployment of exponential technologies, USA/Mexico
- › **Ryukyu Mirai & Startup Lab Lagoon** — Co-Founder / Founding Team · innovation & coworking ecosystem, Okinawa
- › **Lerelen** — Co-Founder, Director · adaptive early-childhood learning platform; Global Learning XPRIZE entrant
- › **EDroneS Inc · Rightz** — Co-Founder / Director · drone systems; venture direction, Mexico

EDUCATION

- 2009 **Ph.D. (Doctor of Engineering) — Computer Science & Engineering**
Kanazawa University, Japan
Novel ML methods for knowledge extraction from biological data.
- 2006 **M.Sc. — Computer Science & Engineering (AI / Machine Learning)**
Kanazawa University, Japan
Adaptive systems & brain–computer interfaces.
- 2009 **Global Startup Program — Exponential Technologies & AI Innovation**
Singularity University, NASA Ames / Silicon Valley, USA
- 2012 **MBA coursework — Entrepreneurship & AI Commercialization**
University of Louisville, USA

PATENTS

- › **Tactile representation of detailed visual and other sensory information by a perception interface apparatus.** U.S. Patent 10,175,756 — granted Jan 8, 2019. Inventor: Jovan David Rebolledo-Mendez.
- › **System for monitoring, processing, analysis and storage of physiological signs for the recognition of emotions.** U.S. Patent Application 2020/0388387.
- › **Environmental surveillance for chemicals and substances on air, land, and water based on multimodal and multidimensional data.** U.S. Provisional 63/484,741 (pending).
- › **Power-grid macro energy saturation characterization.** U.S. Provisional 63/484,744 (pending).

SELECTED PUBLICATIONS

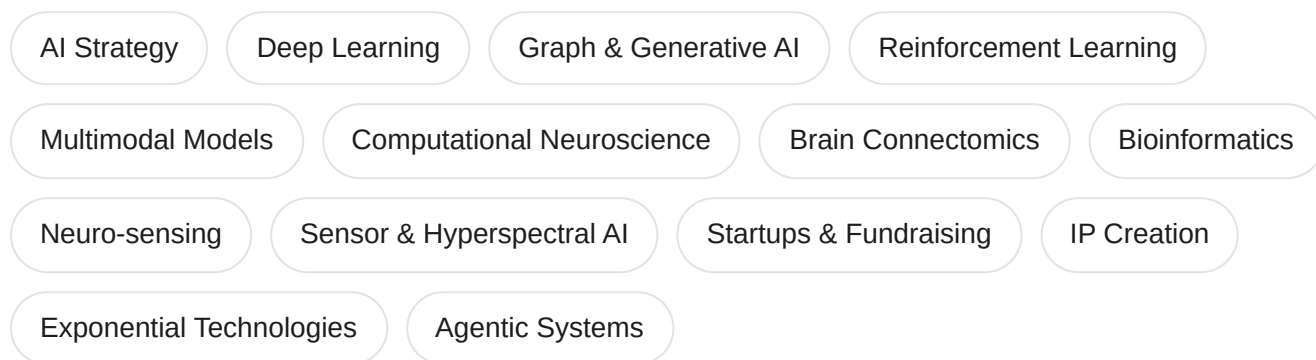
- › Rebolledo-Mendez, J.D., et al. **General Framework for Fast Implementation of Conversational AI as Tech-for-Good in Law.** IEEE Big Data, Osaka, 2022.
- › Rebolledo-Mendez, J.D., et al. **Legal Artificial Assistance Agent to Assist Refugees.** IEEE Big Data, Osaka, 2022.
- › Rebolledo-Mendez, J.D. & Vaishnav, R. **Artificial Intelligence in Precision Oncology: The Way Forward.** Int. J. Molecular & Immuno Oncology, 2022.
- › Rebolledo-Mendez, J.D., et al. **Comparison of Equine Reference Sequence with the Source Data Used to Derive It.** PLoS ONE, 2015.
- › Schneider, J., Rebolledo-Mendez, J.D., McNamara, S. **A Grayscale Pneumatic Micro-Valve for a Reconfigurable Tactile Tablet for Vision-Impaired Individuals.** J. Micromechanics & Microengineering, 2014.
- › Yampolskiy, R.V., Rebolledo-Mendez, J.D., Hindi, M.M. **Password-Protected Visual Cryptography via Cellular Automata.** Springer Transactions on Data Hiding & Multimedia Security, 2013.
- › Rebolledo-Mendez, J.D., et al. **Cross-Kingdom Sequence Similarities Between Human microRNAs and Plant Viruses.** Communicative & Integrative Biology, 2013.

Full publication list (peer-reviewed papers, book chapters, conference proceedings, and 40+ keynote talks) available [here](#) or in the downloadable PDF.

SELECTED RECOGNITION

- ★ XPRIZE Wildfire — semi-finalist (SkySpec) · 2025
- ★ Global Learning XPRIZE — competitor (Lerelen) · 2012
- ★ Featured interview, Nikkei xTECH · 2019
- ★ ERASMUS+ Grant, Sorbonne / Pierre & Marie Curie Institute · 2019
- ★ NSF SBIR Phase I Award (AI innovation) · 2017
- ★ Featured in "We Are TOMODACHI," Japanese Government Cabinet · 2016
- ★ National Researcher Candidate, CONACyT, Mexico · 2014–2018
- ★ Google Full Scholarship · 2009
- ★ MEXT Japanese Government Scholarship · 2004–2009
- ★ First Place, Entrepreneur Contest, Kanazawa University · 2008

CORE EXPERTISE



LANGUAGES

Spanish — native **English** — fluent / near-native **Japanese** — fluent **French** — intermediate

