

Pedro Pereira Basile

PRODUCT DESIGN ENGINEER · BODY-WORN HARDWARE

Mechanical product design engineer with 6+ years developing hardware that is worn on, attached to or held by the human body: on-body medical wearables, ear-worn implant systems, smart wristbands and handheld electronics. Works on fit, comfort and packaging from the first prototype, integrates electronics into miniaturized enclosures, and carries designs through suppliers toward production.



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Milan · Italy

work experience

frog (Capgemini Invent) · Mechanical Engineer II

Mar 2021 – present · Milan, Italy

- Technical lead within multidisciplinary teams (industrial design, UX, research, electronics), turning user research into mechanical architectures, mechanisms and ergonomic forms for MedTech and consumer devices.
- Lead the studio's model shop: in-house rapid prototyping (FDM/SLA), wearable test prototypes and test fixtures used to validate fit, mechanisms and interactions with real users.
- Integrate electronics (PCBs, batteries, sensors, optics) into miniaturized enclosures; DFM/DFA, tolerance analysis and material selection for injection-molded parts; MedTech documentation under ISO 13485.
- Take designs toward production with manufacturers and mold makers; guide junior engineers and industrial designers.

Key projects

- **Roche · On-body wearable sensor (Class II).** Co-developed the mechanical architecture of a skin-worn sensor patch and its single-use applicator: a low-profile, ergonomic patch enclosure packaging the sensor, PCB and battery, and an all-plastic applicator mechanism with molded-in compliant springs. Delivered the high-fidelity and functional prototypes used for validation.
- **Advanced Bionics · Next-generation cochlear implant (ear-worn).** Led hands-on proof-of-concept prototyping of three provocative concepts tested with users and stakeholders; the results produced 10 user-need insights and the next-generation requirements.
- **Reydux · Smart wristband.** From design research on wrist interactions to internal architecture, enclosure CAD, DFM with the manufacturer and the first production batches.
- **JTI · Ploom smart accessories.** Took three validated concepts to production-ready specifications, integrating electronics and validating usability, CMF and mechanics with 3D-printed prototypes. Launched in an Italian test market.
- **Also:** GE Healthcare (modular ultrasound platform, ISO 13485 documentation), Align Technology, Luma (fully functional interactive-projector prototype), Schleich (injection-molded playsets with mold makers).

GIUSTA Bici · Founder & Product Lead

Mar 2017 – Aug 2019 · Curitiba, Brazil

- Founded a studio designing bicycle storage furniture; led three commercially sold products from concept and hands-on prototyping to small-batch production, branding and launch.
- Invented a pedal-actuated lever stand from the engineering thesis, iterated five veneer molds on user feedback, and built a 3D printer for custom parts.

education

Politecnico di Milano · Italy

Master's Degree in Design & Engineering | 2021

Federal University of Technology (UTFPR) · Brazil

Engineer's Degree in Mechanical Engineering | 2017

INSA Lyon · France

One-year Exchange in Mechanical Engineering | 2014

skills

Human factors & design: wearable fit and ergonomics, hardware UX, prototype-based user testing, concept development

Mechanical: mechanism design, compliant mechanisms, miniaturized packaging, DFM/DFA, injection molding, tolerance analysis

CAD & tools: SolidWorks, Creo, Fusion 360, KeyShot, PDM/PLM

Prototyping: FDM/SLA, model making, test fixtures, electro-mechanical mock-ups (Arduino/RPi)

Languages: Portuguese & Italian (native), English (fluent), French & Spanish (proficient)