

Jesse Barrueta

Software Engineering and Expressive AI

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Senior software engineer at Apple with 20+ years of experience and roots in illustration and animation. Builds AI applications, interaction prototypes, and reusable UI systems. Independent work explores embodied AI through expressive eyes, persistent characters, and physical interfaces. Research interests include world models for planning and interaction. Combines visual design judgment with implementation, evaluation, and technical leadership.

Selected Independent Projects

Neural Eyes

Expressive AI research prototype | 2026

- Developed compact PyTorch renderers for independently controlled gaze and expression, with synthetic reference generation and controlled model comparisons.
- Built an interactive observation lab with authored saccades and blinking, exact-state trace replay, checkpoint inspection, and comparisons of raw model predictions.
- Created tools for reviewing illustrated eye styles and evaluating visual errors, keeping learned output distinct from procedural animation effects.

Enormous Brain and Jerry

Persistent AI entity service and Raspberry Pi voice prototype | 2026

- Built a persistent entity service separating identity, memory, and internal state from models and devices, with selective recall and server-side disclosure filtering.
- Connected a Raspberry Pi voice device with speech recognition, LLM interaction, synthesized speech, and local speaker identity; experimented with HuskyLens visual sensing.

Professional Experience

Senior Software Engineer

Apple | Sep 2022 - Present

- Build AI-powered internal applications, dashboards, and reusable React component libraries; integrate LLM capabilities through application APIs.
- Design and implement Node.js and FastAPI services and reusable context infrastructure for AI applications.
- Develop evaluation and testing workflows, technical documentation, and demos; mentor engineers on implementation and application architecture.

Professional Experience Continued

Staff Software Engineer

Carbon Health | Apr 2022 - Sep 2022

- Established UI engineering practices and implemented prefix-tree search for patient-facing applications.

Senior Technology Architect and Power Programmer Mentor

Apple, LinkedIn, Infosys | May 2018 - Apr 2022

- Architected and built four major applications, including public-facing Sales & Trends, with an emphasis on UI performance and scalable architecture.
- Implemented GraphQL and Apollo data access; mentored nine engineers in technical implementation and career development.
- Conducted technical interviews and supported engineering teams through architecture and implementation decisions.

UI Architect

Anthem Blue Cross, UST Global | Jun 2017 - May 2018

- Led multiple engineering teams and established UI development practices across nationwide teams.
- Introduced test-driven development and mentored engineers in functional programming.

Senior UI Engineer

Beachbody | Sep 2014 - Feb 2017

- Built custom front-end framework components and internal applications using React, Elasticsearch, and MongoDB.
- Led UI engineering work with executive stakeholders and introduced Agile practices across teams.

Technical Skills

Interfaces and interaction: React, TypeScript, JavaScript, HTML, CSS, SVG, component libraries, design systems, accessibility, animation, prototyping

AI and services: Python, PyTorch, LLM integration, Node.js, FastAPI, speech interfaces, local and cloud model APIs

Data and delivery: GraphQL, Apollo, Elasticsearch, MongoDB, Git, CI/CD, unit and integration testing, browser testing

Physical prototyping: Raspberry Pi, ESP32, I2C sensors, voice hardware, tactile interface exploration

Creative Background

Illustration and animation, including early interactive work with Flash and ActionScript. Recording artist releasing music as Jesse From The Future. Current hardware exploration includes a Raspberry Pi music player with tactile controls and a motorized playhead concept.

Professional Development

Generative AI with Large Language Models

Generative AI Essentials Overview and Impact

Prompt Engineering for ChatGPT