

Jacob Stevenson

Research software engineer and AI consultant

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I translate ideas and expertise into software that works: AI systems, search, websites, and mobile apps for researchers, startups, and the teams around them.

PROJECTS AND EXPERIENCE

Melody Search Index

Sept 2023 – now

Research software engineer, BYU music research

- Solo-built a full-stack melody-similarity search, with OCR and RAG, over a 10k+ record dataset.
- Cut indexing time 99% (overnight to minutes) and query time 96% (minutes to seconds) for researchers worldwide.
- Presented the work at conferences in Texas, Salzburg, and Venice.

FMC Research Assistant

2026 – now

Search for 19th-century French music press

- Built keyword and semantic search (PostgreSQL full-text, bge-m3 embeddings, reranking) over 4,033 documents and 16,574 pages, running on local GPUs.
- Retired AI-written answers at the scholars' request; every result is a quoted, cited source page.

AI vs. human sentiment analysis

LLM evaluation for BYU religion researchers

- Built an LLM pipeline that codes newspaper articles on the researchers' own schema and measures its agreement with human coders.

Yellowstone field guide app

2026 – now

Offline Android app for a BYU field course

- Building an offline field guide from a 40-page microbiology guidebook, checked by 1,243 automated content assertions.

Auto-cropper

Computer vision

- Automated cropping for 7k+ images: 25x faster, with 96% less manual editing for a team of five.

Biosignal research

Signal processing for "Evaluating EEG Monitoring of Standard TMS Intervention for Anxiety"

- Used FFT and statistical modeling on EEG and heart-rate data to separate state anxiety from trait anxiety.

All projects at jistevenson.com/work

EDUCATION

B.S. Computer Science, Brigham Young University

Coursework: advanced software construction, advanced programming, web programming, algorithms, computer systems, software design, systems programming, mathematical cryptography, and computer security.

TALKS

- A Cohesive Look at RAG for Research · France: Music and Culture · Venice, Italy · 2026
- Multi-faceted Strategies for MEI Corpus Building · IAML Congress · Salzburg, Austria · 2025
- Simplifying MEI for Searching Applications · Music Encoding Conference · Texas, USA · 2024

SKILLS

Languages	Java, C#, C and C++, Python, JavaScript and TypeScript, SQL
AI and data	LLMs, RAG, Vector embeddings, Semantic search, Elasticsearch, Web scraping, OpenCV, Signal processing
Platforms	AWS, Docker, Linux, Git, PostgreSQL, REST APIs, Android
Exploring	Cryptography, Zero-knowledge proofs, IoT, Neural networks, Integer programming

ALSO

English and Spanish. Eagle Scout, black belt, musician, DM, philosopher, zymologist, scuba diver, forever curious, and former “World’s Youngest Person.”