

Thomas Baker

Cupertino, CA
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PORTFOLIO

<https://www.thomasnbaker.com/> – Contains both my creative and technical portfolios.

WORK EXPERIENCE

Rockford Fosgate – *Vehicle Audio Systems*

Tempe, AZ

Acoustic Systems Engineer

Sept 2024 – Present

- Served as DSP Tuning Engineer for numerous Harley-Davidson, Polaris, and Can-Am vehicles using SigmaStudio, Audio Weaver, Audio Precision, SMAART, AKM, and proprietary software. Successfully tuned all audio systems to meet frequency response and volume output targets requested by stakeholders.
- Identified and resolved several critical flaws in Harley-Davidson's audio DSP architecture, and led a full redesign using Analog Devices SigmaStudio. Scheduled for implementation in the next major release.
- Conducted rigorous validation testing and measurements using Klippel, CAN, oscilloscopes, and multimeters (DMM) to verify optimal acoustic, mechanical, and thermal performance of Harley Davidson and Polaris audio platforms. Performed thorough analysis of speaker failures and unexpected system behavior, determined underlying causes, and implemented corrective actions.
- Worked closely with the electrical, embedded, and acoustic engineering teams to ensure unified operation and performance of audio systems.

TikTok – *Social Media Platform*

San Jose, CA

Production Intern – Speech, Audio, and Music Intelligence Team

May – Aug 2023

- Created templates and assets for TikTok's music artificial intelligence (AI) models utilizing Ableton Live, Python, command-line (Terminal), and Git version control. Original "Speech to Song" template released on both TikTok and CapCut platforms.
- Identified areas of improvement in existing audio features, and provided comprehensive solutions to address them by writing technical documents for project managers and developers.
- Proposed a new audio feature for the TikTok platform, which was widely praised by team leads.

ANIMAL Music – *Post-Production Studio*

Miami, FL

Assistant Engineer, Production Intern

Jun 2022 – May 2023

- Created an original track that was placed on an AARP Radio commercial. Composed music and curated commercial pitches to advertising agencies for companies such as Google, Intuit, T-Mobile.
- Administered composer outreach program, and managed licensing contracts for composer libraries.
- Later employed part-time after internship as the assistant engineer for their artist residency program.

EDUCATION

University of Miami

Coral Gables, FL

Master and Bachelor of Science - *Music Engineering and Technology*

Class of 2023 and 2024

Minor - *Electrical Engineering*

- **GPA** Graduate: 3.93 / 4.0, Undergraduate: 3.88 / 4.0. Provost's Honor roll (Fall 2020 – Spring 2023)
- **AES Journal Paper, Master's Thesis** – Conducted research in the field of black-box modeling of an unknown non-linear audio system. Utilizing MATLAB, successfully lowered the energy of aliasing frequencies in a Chebyshev non-linear model by over 16dB using a computationally efficient method. Master's thesis expanded with the help of a co-author and published as an AES journal paper titled "Antiderivative Antialiasing for Chebyshev Based Generalized Hammerstein Models"
- **Senior Design Project** – Designed and fabricated a novel audio device to convert between consumer and professional line-level specifications. PCB was designed using KiCad and assembled by hand.
- **Music AI** – Studied the process, architecture, and code of music-analytic and music-generative tasks. Topics include source separation, pattern discovery, and music generation.
- **Various Courses** – Advanced courses involved creating VST plug-ins with C++, understanding and using MPEG compression, video and color tech, designing acoustic treatment, and psychoacoustic phenomena.