

Ben Crystal

XR Software Developer — Creative Technologist

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Professional Experience

Major League Baseball (Creative Technologist) 2022 - 2024

- Developed and provided technical and artistic consultation for the MLB Next mobile AR platform, reaching 10,000+ iOS/Android users at flagship events
- Optimized performance and user experience for MLB VR and Home Run Derby VR through cross-team collaboration
- Implemented cross-platform XR experiences integrating physical computing and custom hardware interfaces
- Collaborated with stakeholders from Google, Unity, and T-Mobile on in-production AR experiences

NYU XR and Audio Labs (Research and Teaching Assistant) 2020 - 2022

- Mentored 20+ graduate students designing digital and electronic instruments through a variety of mediums, primarily AR and VR
- Crafted and led lectures on the development and implementation of various audio technologies including integration in Unity and Unreal
- Developed technical curriculum surrounding NYU's audio and synth labs
- Led interactive exhibition at Federal Hall, maintaining multiple XR installations and managing 12+ docents

Selected Technical Projects

XR Live Music Performance Space (Independent Developer, NYU Graduate Thesis) 2020 - Present

- Developed 6+ unique XR music tools across Apple Vision Pro, Meta Quest, and WebXR using Unity and native SDKs
- Designed gesture and eye tracking interfaces for accessible and intuitive performances using computer vision
- Architected real-time motion control systems using OSC protocols and machine learning
- Implemented real-time audio processing pipeline with Ableton Live and reactive visualizations

Vocal Synthesizer (Founder, Technical Lead, UVM Honors Thesis) 2018 - 2019

- Architected polyphonic vocal harmony generator using phase vocoder-based custom DSP algorithm in C++
- Integrated a Raspberry Pi, Arduino (ESP32), and custom circuit for an intuitive, wireless, near real-time performance
- Led and managed 4-person engineering team through UVM and NSF-funded development cycles

Education

New York University (M.S. in Integrated Digital Media (4.0 GPA)) 2020 - 2022

University of Vermont (B.S. in Electrical Engineering, Honors College (3.5 GPA)) 2015 - 2019

Software and Technical Skills

XR Development

Meta Quest, Apple Vision Pro, WebXR, Unity, Unreal Engine, Lens Studio, Blender, Reality Composer Pro

Programming

C#, Swift, Python, C, C++, Git, Cursor

Creative Tools

Ableton Live, Logic Pro, Pro Tools, Max MSP, Touch Designer, Figma, Adobe Suite

Additional Information

Awards: NSF I-CORPS Grant, UVM SURF Grant, Presidential Scholarship, Honors College President

Activities: YouTube Creator, Music Production, SAE Formula Hybrid, IEEE, Onewheel Racing