

Ben Crystal

XR Software Developer | Creative Technologist
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Professional Experience

Major League Baseball

Creative Technologist | May 2022 - October 2023

- Developed and provided technical and artistic consultation for the MLB-Next 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 | November 2020 - May 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 (NYU Graduate Thesis)

Independent Developer | December 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 (UVM Honors Thesis and Senior Design)

Founder and Technical Lead | May 2018 - May 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 (NYU)

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

University of Vermont (UVM)

B.S. in Electrical Engineering (3.5 GPA)
Honors College Scholar
2015 - 2019

Software and Applications

XR Development Platforms

Meta Quest	Apple Vision Pro
WebXR	Snap Glasses

XR Engines

Unity	Unreal Engine
Apple XR Suite	AR Lens Studio

Programming Languages

C#	C/ C++
Python	Swift

Music Production

Ableton Live	Max MSP/ M4L
Logic Pro X	Pro Tools

Visual Design

Premiere Pro	Illustrator
After Effects	Blender

Other Passions

YouTube Creator	Onewheel Racing
Performing Music	SAE Formula Hybrid
Music Production	IEEE
Synthesizer Club	Fluent Italian

Awards and Achievements

NSF I-CORPS Entrepreneurship Grant Recipient
UVM SURF Research Grand Recipient
UVM Full Presidential Scholarship Recipient
NYU Merit Scholarship Recipient
UVM Honors College Student Council President