David Robert
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A creative technologist and interactive developer focused on spatial and interactive technologies for responsive environments. Between scholarly research, work at studios, and personal pursuits, I have executed several large projects from prototype to final product. I am interested in bringing the digital world into our physical world, and vice versa. With my diverse work experiences and a broad skill set, I am excited to continue to push the creative boundaries of technology to create compelling environments for human experience.

Experience

Creative Technologist / Lab Assistant
Design + Technology LAB,
Toronto Metropolitan University
Toronto ON
September 2021 - April 2022
September 2022 - April 2023

- Assisted in day-to-day operations of the lab, including maintenance and operation of lab equipment. This includes 3D printing, laser cutting, XR, and robotics.
- Created an interactive installation for DesignTO 2022 using TouchDesigner, OpenVR, a KUKA robot arm, and full-stack web development.
- Guided students in XR-fashion projects.

Research Assistant [AI]
Technology Research in Performance Lab,
Toronto Metropolitan University
Toronto ON
September 2022 - April 2023

- Assisted a School of Performance professor in developing an interactive AI-performance.
- Used OpenAI's Whisper to transcribe speech, OpenAI's API to generate responses, and Google Cloud's API for text-to-speech.
- Developed using Python and prototyped interfaces in TouchDesigner.

Teaching Assistant [Physical Computing]
Toronto Metropolitan University
Toronto ON
September 2022 - December 2022

- Assessed students and gave feedback on projects for RTA 321: Intro to Tangible Media, a compulsory physical computing course for New Media students

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Creative Developer Intern
Jam3
Toronto ON
May 2022 - August 2022

- Developed experiences for the web using Three.js, React, Node, MongoDB, and GLSL.
- Worked with a team of interns including one other developer, two designers, and a production coordinator.
- Developed a multiplayer 3D environment with realtime interactions and persistent individual and environment data.

Research Assistant [AR]
Toronto Metropolitan University
Toronto ON
July 2021 - April 2022

- Developed an AR application using Unity [C#] for the NACO centred on enhancing user experience through spatial and interactive audio.
- Co-wrote paper accepted to EVA London 2022.

Technical Consultant
CRTCL Crafting
Toronto ON
July 2021 - September 2021

- Developed the technical setup for a future generative installation, including OSC and Serial communications design.
- Created simple aesthetic prototypes in TouchDesigner with Arduino input.

Education

BA in Media Production
Concentration in Digital Media
4.27 / 4.33 GPA
Toronto Metropolitan University
Toronto ON
September 2019 – April 2023

Skills

Programming
-Arduino
-JavaScript
  -Node.js
  -p5.js
  -Three.js
-Processing
-Python
-Robotic Operating System 2
-TouchDesigner
-Unity [C#]
-Unreal Engine [C++ & Blueprints]

Equipment & Sensors
-Accelerometers
-Capacitive sensors
-Create 3 Robot
-Leap Motion Controller
-Kinect
-Projectors
-RealSense depth camera
-Thermal sensors

Fabrication
-3D printing
-Laser cutting
-Soldering

Unpaid & Educational Experience

Undergraduate Researcher [Unreal & Networking Developer]
Synaesthetic Media Lab,
Toronto Metropolitan University
Toronto ON
September 2022 - December 2022

- Worked as part of a joint research team between Toronto Metropolitan University and University of Toronto creating interactive boat-drones for performances.
- Developed a simulation tool in Unreal Engine 5 [C++] to test functionality and pre-visualize performances, as well as communication systems for the separate components.

Interactive Developer
Ontario Science Centre
Toronto ON
January 2022 - April 2022

- Created an interactive audio-experience for children at the Ontario Science Centre.
- Developed interactions using Unity & Arduino, managed projection using TouchDesigner.

Code Coach
Toronto Metropolitan University
Toronto ON
September 2021 - April 2022

- Helped students fix issues in their creative coding projects and tutored them on core programming concepts.

Undergraduate Researcher [Unreal AR Developer]
Synaesthetic Media Lab,
Toronto Metropolitan University
Toronto ON
January 2021 - April 2021

- Designed and developed an AR HoloLens 2 application in Unreal Engine 4 [Blueprints].
- The app supports training for medical workers through the manipulation of medical models with gestures and tools.

Fabrication Technician
Philip Beesley Studio,
Living Architecture Systems Group
Toronto ON
February 2020 - March 2020

- Fabricated components for an interactive installation that was part of the 2021 Venice Biennale of Architecture.
- Laser cutting; assembly of metal and acrylic scaffolding; soldering and testing electronic components.

Publications

David Bouchard, Cintia Cristia, David Robert, Michael Bergmann. 2022. **Augmented Symphony: An augmented reality application for immersive music listening**. In *Proceedings of EVA London 2022*. Computer Arts Society, London, England, UK.