

# Katie Lowen

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## Education

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### Master of Science in Computer Science

NORTHEASTERN UNIVERSITY  
Vancouver, Canada

09/2020 - 04/2023

### Professional Contemporary Dance Training Program

MODUS OPERANDI  
Vancouver, Canada

09/2015 - 06/2017

### Bachelor of Business Administration, Finance

SIMON FRASER UNIVERSITY  
Vancouver, Canada

09/2011 - 12/2015

## Professional Experience

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### Data Engineer

UNITY TECHNOLOGIES (ZIVA DYNAMICS)

10/2023 - current

- Develop and maintain ML visualization pipelines to support data analysis and model training for video-to-animation and audio-to-animation tools.
- Develop motion capture data workflows, integrating maya scripting and Ziva muscle deformation technology, to process raw data recorded in Vicon Shogun into a cleaned, baked, and synced format for machine learning.

### Data Developer

UNITY TECHNOLOGIES (ZIVA DYNAMICS)

05/2022 - 10/2023

- Collaborate with VFX artists and the ML Team to create automated pipeline workflows for video, audio, 3D and 4D data processing.
- Organize and oversee internal and client motion capture shoots, utilizing head-mounted cameras and full-body motion capture, to ensure data is captured in alignment with our ML team's needs for optimizing results. Assist with client 4D scan sessions to ensure the actor's emotive delivery best matches our internal baseline requirements.

### Software Engineer/Game Development Intern

UNITY TECHNOLOGIES (ZIVA DYNAMICS)

01/2022 - 04/2022

- Collaborate with VFX artists to create an Unreal Engine (UE4) demo utilizing UE4 AI to showcase the Ziva Real-Time muscle simulation technology.
- Develop multiple Non-Player Characters, UI interfaces and camera controls. Build UE4 BluePrints for walking and flying AI controllers, Behavior Trees, Black Boards, animations, montages, notifies, footprints, camera controls, UI controls, and Inverse Kinematics of a non-standard skeleton.
- Record and create customized animations using Motionbuilder, Vicon Shogun, and Maya to characterize the demo creature.

**Teaching Assistant**  
NORTHEASTERN UNIVERSITY

01/2021 - 12/2021

- Advance students' understanding of class material and programming fundamentals in C, Python, and data structures.
- Provide constructive feedback on individual and group projects and designate an hour per student each week for one on one educational development.
- Guest lecture a class each semester.

**Co-Artistic Director**  
BOOMBOX INDEPENDENT ART SPACE

09/2016 - 09/2022

- Develop multiple residency structures specific to Vancouver's community needs, specifically focusing on queer youth, underrepresented communities, and artists in various stages of their careers.
- Manage financial and resource distribution throughout the year, allocating resources towards benefiting current and future artists.
- Program, curate and promote the Boombox performance season by creating engaging performance structures for audience attendance and retainment.

**Choreographic Residency Director**  
ARTSTARTS: YOUTH ENGAGEMENT

09/2018 - 05/2020

- Create residency and professional presentation opportunities centering queer, emerging performance and visual artists in East Vancouver.
- Write grants to municipal contemporary art funding bodies, organizing the submission process and requirements, mentorship arrangements, studio space availability, and budgeting.

**Dance Company Member**  
RADICAL SYSTEM ARTS DANCE COMPANY

08/2017 - 05/2021

- Nationally and Internationally tour full-length works as a contemporary dancer.
- Collaborate with a team of multidisciplinary artists and propose throughout creative development periods for new, large-scale performance projects.

## Professional Artist Experience

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### Selected Choreographic Experience

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2019, *all things wet are dangerous*, presented by Arts Assembly, Vancouver, Canada.

2019, *all things wet are dangerous*, presented by Boombox Alternative Performance Space, Vancouver, Canada.

2018, *all things wet are dangerous*, presented by WhatLab Grand Opening (commission), Vancouver, Canada.

2017, *Blue Crush*, presented by Dance In Vancouver Biennial Festival, Vancouver, Canada.

2017, *Blue Crush*, presented by New Works Arts Organization, Vancouver, Canada.

2017, *Dancers Playing Basketball*, presented by Vancouver International Dance Festival Vancouver, Canada.

2015, *Green Embassy*, presented by Vancouver Fashion Week, Vancouver, Canada

## **Selected Performance Experience**

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2019, *Epilogos*, created by Shay Kuebler, in collaboration with Radical System Arts, presented at Banff National Arts Center, 90 minutes.

2019, *A Vista*, created by Josh Hite, Stephen Hill, Alex Ferguson, in collaboration with Fight With a Stick, presented at Massey Theatre, 120 minutes.

2017-2019, *Telemetry*, created by Shay Kuebler, in collaboration with Radical System Arts, presented nationally and internationally (Germany, United States of America, Israel, Canada), 75 minutes.

2018, *Contes Cruels*, created by Serge Bennathan, in collaboration with Les Productions Figlio, presented at The Firehall Arts Centre, 60 minutes.

2017, *Blue Crush*, created and performed by Katie Lowen and Zahra Shahab, in collaboration with Dance In Vancouver Festival, presented at Boombox, 30 minutes.

2017, *META*, created by Deanna Peters, in collaboration with Vancouver International Dance Festival, presented by The Scotia Bank Dance Centre, 50 minutes.

2017, *Glitch Film*, created by Jamie Robinson, in collaboration with FORM Festival of Recorded Movement, sponsored by LuluLemon, 15 minutes.

2017, *The Tunnel*, created by Heather Laura Gray, in collaboration with New Works Arts Organization, presented by Theatre La Seizieme, 60 minutes.

## **Selected Curation, Residency, and Show Production Experience**

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2018, *Creative Queer Day Residencies*, 9 featured artists, 4 week residency duration.

2017, *Boom 3 Residencies and Show*, 6 featured artists, 6 week residency duration.

2017, *Boom 2 Residencies and Show*, 5 featured artists, 8 week residency duration.

2017, *Orchestra #1 Artist Talk Benjamin Kamino*, 1 featured artist, 3 week residency duration.

2016, *Boombox; Unveilings*, 4 featured artists, 8 week residency duration.

## **Awards and Honors**

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### **Academic**

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2023

- (\$6,000) Capstone Research Project, University of Victoria

2020

- (\$500) Athena Pathways Align Program Scholarship, Athena Pathways

## Artistic

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2019

- (\$10,000) ArtStarts Youth Residency Grant, City of Vancouver

2018

- (\$10,000) ArtStarts Youth Residency Grant, City of Vancouver
- (\$7,500) Professional Development Grant, Canada Council for the Arts
- (\$4,800) Professional Development Grant, British Columbia Arts Council

2017

- (\$21,400) Early Career Development Grant, British Columbia Arts Council

2016

- (\$5,000) Professional Training Program Scholarship, British Columbia Arts Council

## Athletic

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2015

- (\$10,000) Athletic Scholarship, Simon Fraser University Women's Basketball Team
- Simon Fraser University, Academic All-American
- Great Northwest Athletic Conference Honorable Mention
- Great Northwest Athletic Conference Academic Distinction

2014

- (\$10,000) Athletic Scholarship, Simon Fraser University Women's Basketball Team
- Simon Fraser University, Academic All-American
- Great Northwest Athletic Conference Honorable Mention
- Great Northwest Athletic Conference Academic Distinction

2013

- (\$10,000) Athletic Scholarship, Simon Fraser University Women's Basketball Team
- Simon Fraser University, Academic All-American
- Great Northwest Athletic Conference Honorable Mention
- Great Northwest Athletic Conference Academic Distinction

2012

- (\$10,000) Athletic Scholarship, Simon Fraser University Women's Basketball Team
- Simon Fraser University, Academic All-American
- Great Northwest Athletic Conference Honorable Mention
- Great Northwest Athletic Conference Academic Distinction

## Skills

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### Professional

- **Language:** Python
- **Digital Content Creation:** Maya, MotionBuilder

- **Open Source:** ffmpeg, BWFmetaEdit, EDL Processing, Pymiere
- **Software:** Vicon Motion Capture System, Vicon Shogun, Adobe Premiere Pro, MongoDB, Boto3/AWS
- **Movement:** Choreography and movement direction for actors on set (gesture database collection)

## Internship

- **Language:** Blueprints (Unreal Engine)
- **Digital Content Creation:** ZBrush, OpenUV, Adobe Substance
- **Software:** Unreal Engine

## Academic

- **Language:** C, C#, Java, SQL, JavaScript, HTML, CSS,
- **Software:** Unity, Unreal Engine

## Projects

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### Unreal Engine Demo (Internship) UNITY TECHNOLOGIES (ZIVA DYNAMICS)

01/2022 - 04/2022

- **Project Description:** Create a demo where the user is able to self direct an exploration of the Ziva Dynamics real-time muscle simulation technology.
- **Contributions:** NPC character behaviour (walking and flying AI controllers, Behavior Trees, Black Boards, NPC Animation, Motion Capture Recording, animation clean up, custom camera UI.
- **Tools:** Unreal Engine Blueprints, Vicon Motion Capture System, Maya, MotionBuilder, Adobe Substance, ZBrush
- **Project Link:** [☞](#)

### Capstone Project (MSCS) NORTHEASTERN UNIVERSITY

01/2023 - 04/2023

- **Project Description:** In a landscape where generative AI is reshaping the role of the artist in commercial and contemporary art sectors, explore how explainable AI installations can act as a stabilizing force to the artistic community, inviting them into the conversation and relaying how these tools can help (rather than hinder) their workflows and employment prospects.
- **Contributions:** Concept and create prototype, literary review, write paper.
- **Tools:** Python, YOLO, Roboflow, googleColab, LabelImg, LaTeX
- **Project Link:** [☞](#)

### HCI Application Prototype (MSCS) NORTHEASTERN UNIVERSITY

09/2022 - 12/2022

- **Project Description:** Create a prototype of an application focusing on assisting the nature preserving activism efforts of the Fairy Creek old-growth community.
- **Contributions:** Concept and create prototype, user flow diagrams, competitor research, persona analysis.
- **Tools:** Figma, LaTeX
- **Project Link:** [☞](#)

### PetSit Website (MSCS)

09/2022 - 12/2022

NORTHEASTERN UNIVERSITY

- **Project Description:** Create a website with user authorization, customized elements when the user is logged in, dynamically resizes, contains a clear user profile creation and workflow, and contains a database connection with the ability to add, delete, filter, and edit a collection.
- **Contributions:** Concept and create user flow, filtering and search database functionality, user profile creation process.
- **Tools:** JavaScript, React, MongoDB, OAuth
- **Project Link:** [☞](#)

### Virtual Reality Escape Room (MSCS)

06/2022 - 8/2022

NORTHEASTERN UNIVERSITY

- **Project Description:** Create a cohesive Virtual Reality group project incorporating multiple Unity projects.
- **Contributions:** Concept and create escape room theme, puzzles, and integrate other teammates' projects into a cohesive experience.
- **Tools:** Unity
- **Project Link:** [☞](#)

## Press and Media

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**Northeastern Global News**, "From professional dancer to software developer, Northeastern Vancouver student makes fascinating career pivot" [☞](#)

**Northeastern Khoury Story**, "Meet Katie Lowen" [☞](#)

**CBC**, "The fine art of survival: 'Dance should exist anywhere,' including container trucks" [☞](#)

**CBC The Morning Edition with Steven Quinn**, "The fine art of survival: Boombox", radio interview

**CBC Vancouver Nightly News**, "Dance should exist anywhere, even in container trucks | Fine Art of Survival" [☞](#)

**Dance Central** "Performing Space - A conversation with Katie Lowen and Diego Romero and Boombox", [☞](#)