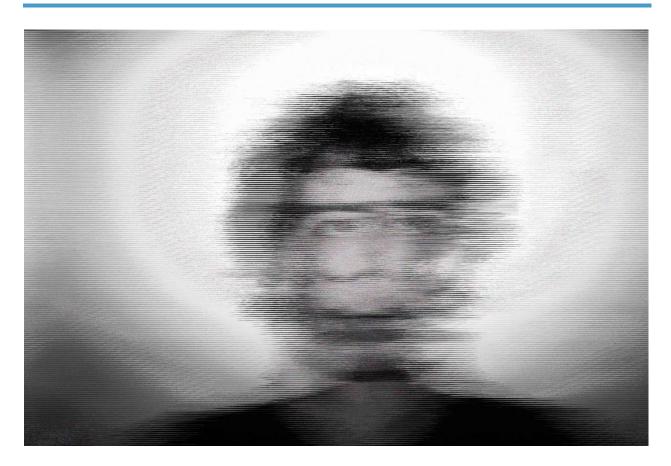Nathan Villicaña-Shaw
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Exhibitions

Year	Exhibit	Venue
2021	Eunomos	NIME conference, Shanghai, China (40% acceptance rate)
2019 - 2021	Hypersoundwalk Pop-up Installations	Various throughout New Zealand, California, Nevada, Arizona, and Colorado
2018	T.A.P. (but don't touch)* VoiceShell*	IfSoWhat? – Palace of Fine Arts – San Francisco Te Papa - New Zealand National Museum – Wellington, New Zealand
	The Value of Play	Private Residence
2017	Veggie Kingdom*	Digital Arts Expo
	6 * 9 = 42	Digital Arts Expo
	Digital Love	Digital Arts Expo

Collaborations are denoted with a *

	WindBot*	Digital Arts Expo
	No Humans Allowed	WaveCave Gallery
2016	Antisocial	MTIID Masters Show
	Electrical Box	WaveCave Gallery
	Cathode Ray Tubes	WaveCave Gallery
		Kadenze Inc.
	Rotary SNES	Kadenze Inc.
	SNES Trinity	Las Vegas Mini Makers Faire
		Makers Faire Bay Area
		Kadenze Inc.
		Digital Arts Expo
	Never Forget	Integrated Media Showcase
	Symbiotic SNES	Integrated Media Showcase
		Makers Faire Bay Area
	Yin˜Yang*	Digital Arts Expo
		MTIID Masters Show
	Computer Music	Digital Arts Expo
2015	Yin˜Yang*	CalArts MFA MTIID Fall Show
	1990	CalArts Festival, Digital Arts Expo
	Digital Rain*	Digital Arts Expo
	Binaural*	Digital Arts Expo
	Cubist Pi*	Digital Arts Expo
2014	Toys	Digital Arts Expo
	Polygon Blood Arena 3D*	Digital Arts Expo

Projects

2019 - 2020	Legatus	
	Audio-reactive soundscape augmentation electronic creatures	
2019 - 2020	Explorator	
	Audio-reactive soundscape augmentation mechatronic creatures,	
	Five species have currently been designed and exhibited	
2019 - 2020	Speculātor	
	Audio-reactive soundscape augmentation electronic creatures	
2018	DSES – Digital Sound Effect System	
	US Patent prototype, currently under NDA	
2018	T.A.P. (but don't touch)	
	Projection mapping on a Porsche Cayman. System driven in real-time by tweets about the Porsche Brand. Exhibited from April 26th-29th at the If So, What? festival at the Palace of Fine Arts in San Francisco.	
2017 - 2018	The Body Without Fatigue*	
	Group of still and moving pictures produced with machine learning computational techniques. In collaboration with Norman Klein and Margo Bistis	
2017	Color Independent Slit-Scan Video Processing	
	Processing program for color independent, temporal slit-scan processing	
2017	Battery Powered Mechatronics	

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		Small, 5V and 12V battery powered mechatronic personalities
2016 – 2017	The Pantheon	
		Comprehensive hardware and software system for creating mechatronic installations and instruments
2015 – 2016	Modular SNES	
		Arduino controlled circuit-bent SNES with patch bay interface
2015 – 2016	Retrono	
		A/V synth built from repurposed NES hardware emulators
2015	Symbiotic SNES	
		Arduino powered interface which allows for novel, new multiplayer modes for SNES games
2015	Discovery Synth*	
		Raspberry Pi powered experimental digital interface and synthesizer
2015	Pi Speaker*	
		Wireless Raspberry Pi powered speaker and synthesizer
2014 - 2015	SnapperBots	
		System for music performance using electromagnetic relay switches
2015	Rotary SNES	
		Circuit-bent SNES with two rotary switches for controlling bend states
2015	Return to Mothership*	
		Large game space where players use different colors of light to defend their spaceship from asteroids.
2015	MyStomp	
		Raspberry Pi and Arduino powered digital stomp box
2014	Circuit Bent Genesis	
		Circuit Bent SEGA Genesis with a breadboard interface for controlling bends
2014	Voltage Slammer	
		Circuit bending probe and interface for controlling up to sixteen circuit bent devices with one interface.
2013	Chronsonome*	
		Chronome RGB grid controller with ultrasonic rangefinders and 10-DOF.
2013	Modular Stompboxes	
		Analog effect pedals with multiple component combinations which can be switched out in real-time using rotary switches.

Performances

2016	Human-Robot Ensemble - CalArts Machine Lab	
		Hedonism Bot, ChucK, heatsink, mechatronic instruments
2015	*CalArts AV Ensemble* - CalArts ROD Concert Hall	
		Korg Nanokontrol, PureData, composer
2015	*Human-Robot Ensemble* - CalArts Machine Lab	

Collaborations are denoted with a *

SnapperBots, feedback, circuit boards, co-composer

2014	*Kekack Ensemble* - Wild Beast Concert Hall
	Monkey Chanter
2013	*CalArts Javanese Gamelan* - CalArts Gamelan Room
	Saron
2013	*Threes Company* - CalArts ROD Concert Hall
	ChucK, co-composer
2013	*Laney College Jazz Ensemble* - Laney College Concert Hall
	Electric Bass
2009 - 2013	*The Machetes* - various SF Bay Area venues, Surf/Folk/Rock
	Electric Bass, composition
2007 - 2011	*The Molestations* - various SF Bay Area venues, Punk/Blues/Rock
	Electric Bass, composition

Curation

2017	Digital Arts Expo
	Curator for the WaveCave gallery
2016	Digital Arts Expo,
	Curator for the ROD Lobby
2015	Digital Arts Expo
	Co-curator for Main Gallery

Recording

2013 - present	BiTDEPH
	Experimental electronic music
2013 - 2015	Various
	Employed by CalArts concert production for live sound reinforcement, live recording and webcam operation.

Bibliography

2021	Speculātor: visual soundscape augmentation of natural environments
	Published in NIME 2021 proceedings – NYU, Shanghai, China (55% acceptance rate)
2018	Mechatronic Performance in Computer Music Compositions
	Published in NIME 2018 proceedings - Virginia Tech and University of Virginia, USA
2017	The Machine Lab: A Modern Classroom to Teach Mechatronic Music
	Published in ICMC 2017 proceedings – Shanghai Conservatory of Music, Shanghai, China

Collaborations are denoted with a *

2017	Electromagnetic Translucence: artistic approaches to interface design for installations, interfaces, and mechatronic performance *CalArts MFA written thesis*
2015 – 2017	http://digitalartsexpo.calarts.edu/ *Features installations presented at the 2014-2017 Digital Arts Expos*
2015 – 2016	http://mtiid.calarts.edu/ *Computer Music, Digital Rain*
2015 – 2017	http://wavecave.calarts.edu/ *Features installations Cathode Ray Tubes, Electrical Box and No Humans Allowed*
2015	oomlout.co.uk *Features the Arduino SNES project.*

Employment

2018 - present	NVS Tech LLC – President/Founder *Creative Technology consultation, interactive installations, prototype construction.*
2014 – present	Self Employed – Installation Artist *Interactive installation artist who focuses on human-circuit interaction.*
2014 – 2018	Self Employed – Creative Technologist *Freelance creative technologist specializing in custom hardware and software solutions for corporate, personal, and artistic applications.*
2016 – 2017	California Institute of the Arts *Graduate assistant for Interface Design, Composition for Robots, and Advanced Circuit Design*
2017	Walt Disney Imagineering *Participated in CalArts Educational Initiative. Worked with senior imaginer mentor to develop and present a blue-sky project to Disney executives.*
2015 - 2017	Junior Research Engineer at Kadenze Inc. *Develop internal data visualization tools, create programs to algorithmically grade students*
2016 - 2017	California Institute of the Arts *Graduate assistant for the Electronics Lab*
2014 – 2017	California Institute of the Arts *Technical Assistant for Concert Production, Digital Arts, and the Music Technology departments.*
2016	On Track Themes *Independent Contractor, helped build public installations.*
2015	Light Riders Production *Independent Contractor, the LIGHTGRID project.*
2015	Radiance Lightworks *Independent Contractor, helped build a LED Curtain.*

Collaborations are denoted with a *

Education

Late 2021 est.	**University of Victoria, Wellington – Ph.D.** *Sonic Engineering Lab for Creative Technology - School of Engineering and Computer Science + New Zealand School of Music*
2017	**CalArts – MFA in Music Technology: Interaction, Intelligence & Design** *installation art, programming, engineering, spacial semiotics, human-circuit interaction, data visualization, teaching, 3.99 equivalent GPA over 71 units*
2017	**Walt Disney Imagineering Educational Initiative** *worked closely with Imagineer mentor and 15 other students over five weeks to craft project proposals which were presented to executive leadership at Walt Disney Imagineering.*
2015	**CalArts, Valencia Ca, BFA in MTIID, Minor in Digital Arts** *programming, design, music performance, engineering, 3.81 equivalent GPA over 78 units*
2014	**UC Berkeley Extension** *programming, electrical engineering*
2011 - 2013	**Laney College, Oakland Ca, AA in Music** *performance, composition, music theory, music history, 4.0 GPA*
2012	**Berkeley City College, Berkeley Ca** *English, Digital Arts*
2005 - 2007	**Sierra College, Rocklin, Ca** *photography, music, film*

Teaching

2017 - 2018	**Adjunct Professor for the Interaction Design program at the California College of the Arts** *Digital and physical prototyping, physical computing, TUI, NUI*
2017	**Guest Lecturer for Interface Design 2 at CalArts (two weeks)** *PCB design for milling with EAGLE CAD and the OtherMill.*
2016	**Guest Lecturer for Composition for Robots (four weeks)** *How to interface with and compose for mechatronic instruments*
2016	**Guest Lecturer for Interface Design at CalArts (two weeks)** *How to design PCB's in EAGLE CAD*

Collaborations are denoted with a *

2015	Co-Teacher for Advanced Circuit Design
	Graduate level course on intermediate electronics, `programming for microcontrollers, and synthesizer design.
2014 – 2016	Hardware Hacking Club at CalArts
	Hardware hacking, electronics, microcontrollers
2014 - 2015	Circuit Bending Club at CalArts
	Circuit bending, basic electronics, microcontrollers, deconstructing consumer electronic devices for artistic pursuits

Grants & Scholarships

2018 - 2021	Victoria Doctoral Scholarship ($169,500 NZD)
2013 - 2017	CalArts Scholarship ($32,000)
2016	Curators Grant ($150)
2016	Travel Grant ($200)
2015	CalArts Club Grant, Hardware Hacking Club ($600)
2014	Cal Grant ($10700)
2014	Métier Grant ($200)
2014	CalArts Club Grant, Circuit Bending Club, ($300)
2014	Métier Grant ($300)

Collaborations are denoted with a *