nico**casale**

m.s. electrical engineering, they/them

contact

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wikipedia: ncasale

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coding

CUDA/HLSL
C++/C#
MATLAB
Python
Java
LATEX
C

languages

native
english
skilled
spanish
basic
italian
french
german

interests

GPU programming, machine learning, computer graphics

education

2017-2018	**M.S.** Electrical Engineering (3.74 GPA)	North Carolina State University (NCSU)
	non-thesis, courses in data science, machine learning, random processes, digital image/signal processing, linear algebra, computer architecture	
2012–2017	**B.S.** summa cum laude (3.84 GPA)	NCSU
	Electrical Engineering, *specialization in Computer Engineering*	
2008–2012	**high school diploma**	Independence/Butler High Schools
	score of 5/5 on six AP exams, Academy of International Studies student	

experience

05 2018 –	**junior metadata programmer**	Earth Resources Technology (ERT)
	ERT contracts with the National Oceanic and Atmospheric Administration (NOAA) to make its swathes of data available to the public	
2016-2017	**independent researcher**	NCSU
	GPU acceleration of an algorithm using NVIDIA's CUDA/C++, under guidance of Dr. Dror Baron. ~28x speedups achieved with a Tesla K80 for multiprocessor approximate message passing (MP-AMP)	
08-12 2014 06-12 2015	**cooperative education intern**	Analog Devices, Inc., Greensboro, NC
	worked on communications infrastructure team under John Oates, Systems Engineer. Improved project through three hardware revisions	

projects

2018 –	**music review website in React (Javascript)**	github
	a project built with friends to host our gratuitous opinions on music	
01-06 2018	**open source project contributions in python and C++**	github
	OpenMined is a homomorphically-encrypted federated learning platform that seeks to provide a secure and sustainable way of training neural networks	
02-05 2018	**linear discriminant analysis and decision trees in MATLAB**	github
	for ECE 759, LDA and Decision Trees were trained on MNIST and Ext. Yale Face Database B to garner an understanding of machine learning techniques	
2017	**orthographic projection in MATLAB**	ECE 592 (digital image processing)
	given a photo of a box and its closest corner in image, program finds faces of box and creates a 3-D model	

| since 2017 | **computer graphics in C++ and MATLAB** | instagram (some code on github) |

using mathematics and image processing concepts to generate art; working with OpenFrameworks (C++), MATLAB, and Google's search API in python

| 2016 | **internet of things (IoT) 'car'** | ECE 306 (embedded systems) |

built a small remote-controlled car with various I/O devices to a Texas Instruments MSP430 Microcontroller, programmed in C

presentations

| 08 2017 | **poster at undergraduate research symposium** | NCSU |

GPU implementation of row-wise approximate message passing (AMP) speedup of ~28x achieved with CUDA/C++

| 04 2017 | **poster at senior design day** | NCSU |

Keg It Out: an IoT beer monitoring service for brewers to optimize distribution. culmination of the Engineering Entrepreneurship Program for senior design

volunteering

| 08 2018 – | **Tranzmission Prison Books Project** | asheville |

providing books and support for marginalized prison populations

| 03 2018 | **participated in Habitat For Humanity build-day** | raleigh |

helped build a new home for a community family

| 03 2018 | **served at a pay-what-you-can restaurant** | A Place At The Table |

served at a community restaurant with a sliding pay scale, starting at $0

| 06 2017 | **cooking & serving food at day-shelter** | love wins ministries |

served food to some of Raleigh's homeless and at-risk population

| 2016 | **family STEM nights** | local elementary & middle schools |

facilitated interactive engineering experiments for K-12 students

| 2016 | **peer tutor for Eta Kappa Nu (HKN, ECE honor society)** | NCSU |

offered free help to undergraduates in ECE courses

| 2013-2016 | **SOUL Garden volunteer** | NCSU |

student-run garden which donates food to those in need

extras

| 2016-2018 | **facilitator, Wake Up Raleigh** |

mindfulness group with weekly events, community engagement

| 2013-2015 | **facilitator, Buddhist Philosophies Club** |

organized events, led discussions, community engagement and leadership

| 2016-2017 | **Co-Op ambassador** |

informed students about the Co-Op program at State; opportunity to demonstrate leadership and character

| 2008 – | **poetry & music writing** |

published in three annual editions of NCSU's artistic and literary book