n. casale
m.s. electrical engineering, they/them

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coding
Java/Groovy/Maven
Javascript/HTML
CUDA/HLSL
MATLAB
C++/C#
Python
LaTeX
C

languages
native
english
skilled
spanish
basic
german
french
italian
cursory
greek
latin

education

01-05 2020	**non-degree student**	UNC Asheville

contingent on course availability, expecting to take sculpture, literary theory/criticism, math, computer science, or physics courses

2017-2018	**M.S.** Electrical Engineering (3.74 GPA)	NC State University (NCSU)

non-thesis, courses in data science algorithms, stochastic processes, digital image/signal processing, matrix theory, computer architecture

2012–2017	**B.S.** *summa cum laude* (3.84 GPA)	NCSU

Electrical Engineering, *concentration 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 –	**associate software engineer**	General Dynamics IT and ERT

contracting with the National Oceanic and Atmospheric Administration (NOAA) to help make its swaths of data available to the public. Interim scrum master (Agile, Kanban). Responsibilities include software tool development for metadata manipulation and management

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.

communications infrastructure proof-of-concept for digital pre-distortion (DPD) in cellular base stations. Improved project through three development stages

presentations

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

GPU implementation of row-wise approximate message passing (AMP)

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

projects

2017 –	**computer graphics in Javascript, LaTeX, C++, Python, and MATLAB**

using mathematics and image processing concepts to generate art; work with OpenFrameworks (C++) and Google's search API

| 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 (line detector) and creates a 3-D model (projection) |

| 2016 | **internet of things (IoT) 'car'** | ECE 306 (embedded systems) |
| | built a small remote-controlled car with various I/O devices upon a Texas Instruments MSP430 Microcontroller, programmed in C |

volunteering

| 08 2018 – | **prison books project** | asheville |
| | providing books and support for marginalized prison populations |

| 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

| 2013-2018 | **facilitator, mindfulness group** | raleigh |
| | organized weekly events, discussions; community engagement and leadership |

| 2016-2017 | **Co-Op ambassador** | |
| | informed students about the Co-Op program at NCSU; opportunity to demonstrate leadership and character |

| 2008 – | **poetry, prose, & music writing** | |
| | published in four annual editions of NCSU's artistic and literary book |

September 4, 2019