

nico casale

m.s. electrical engineering, they/them

contact

ncasale94@gmail.com
(704) 839-1311

n-casale.github.io
github: n-casale

coding

Java/Groovy/Maven
Javascript/HTML
CUDA/HLSL
MATLAB
C++/C#
Python
L^AT_EX
C

languages

native
english
skilled
spanish
basic
german
french
italian

education

- 2017-2018 **M.S. Electrical Engineering (3.74 GPA)** North Carolina State University (NCSU)
non-thesis, courses in data science, machine learning, stochastic 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 – **associate software engineer** General Dynamics IT and ERT
contractor with the National Oceanic and Atmospheric Administration (NOAA) to help make its swathes of data available to the public. Responsibilities include software tool development, metadata generation and maintenance
- 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 multi-processor approximate message passing (MP-AMP)
- 08-12 2014
06-12 2015 **cooperative education intern** Analog Devices, Inc., Greensboro, NC
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 C++, L^AT_EX, and MATLAB**
using mathematics and image processing concepts to generate art; work with OpenFrameworks (C++), MATLAB, and Google's search API in python

2018	music review website in React (Javascript) a project built with friends to host our gratuitous opinions on music	github
01-06 2018	open source project contributions in python and C++ OpenMined is a homomorphically-encrypted federated learning platform that seeks to provide a secure and sustainable way of training neural networks	github
02-05 2018	linear discriminant analysis and decision trees in MATLAB 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	github
2017	orthographic projection in MATLAB given a photo of a box and its closest corner in image, program finds faces of box and creates a 3-D model	ECE 592 (digital image processing)
2016	internet of things (IoT) 'car' built a small remote-controlled car with various I/O devices to a Texas Instruments MSP430 Microcontroller, programmed in C	ECE 306 (embedded systems)

volunteering

08 2018 –	Tranzmission Prison Books Project providing books and support for marginalized prison populations	asheville
2016	family STEM nights facilitated interactive engineering experiments for K-12 students	local elementary & middle schools
2016	peer tutor for Eta Kappa Nu (HKN, ECE honor society) offered free help to undergraduates in ECE courses	NCSU
2013-2016	SOUL Garden volunteer student-run garden which donates food to those in need	NCSU

extras

2016-2018	facilitator, Wake Up Raleigh mindfulness group with weekly events, community engagement and leadership
2013-2015	facilitator, Buddhist Philosophies Club organized weekly events, 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, prose, & music writing published in four annual editions of NCSU's artistic and literary book