

nicocasale

m.s. electrical engineering, they/them

contact

ncasale94@gmail.com
n-casale.github.io
github: n-casale
wikipedia: ncasale

(704) 839-1311

coding

CUDA/HLSL
C++/C#
MATLAB
Python
Java
L^AT_EX
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 multi-processor 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 using mathematics and image processing concepts to generate art; working with OpenFrameworks (C++), MATLAB, and Google's search API in python	instagram (some code on github)
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)

presentations

08 2017	poster at undergraduate research symposium GPU implementation of row-wise approximate message passing (AMP) speedup of ~28x achieved with CUDA/C++	NCSU
04 2017	poster at senior design day Keg It Out: an IoT beer monitoring service for brewers to optimize distribution. culmination of the Engineering Entrepreneurship Program for senior design	NCSU

volunteering

08 2018 –	Tranzmission Prison Books Project help to provide books for marginalized prison populations	asheville
03 2018	participated in Habitat For Humanity build-day helped build a new home for a community family	raleigh
03 2018	served at a pay-what-you-can restaurant served at a community restaurant with a sliding pay scale, starting at \$0	A Place At The Table
06 2017	cooking & serving food at day-shelter served food to some of Raleigh's homeless and at-risk population	love wins ministries
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

extracurriculars

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	