

nicocasale

m.s. student, they/them pronouns

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programming

C++/CUDA

MATLAB

Python

L^AT_EX

C

languages

native:

english

skilled:

spanish

basic:

italian

french

german

interests

GPU programming, computer graphics, machine learning, data mining

education

- 2017-2018 **M.S.** candidate in Electrical Engineering North Carolina State University (NCSU)
non-thesis, courses in random processes, digital image/signal processing,
linear algebra, data science, 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 A.P. exams, Academy of International Studies student

experience

- 2016-2018 **independent research** NCSU Electrical Engineering Department
GPU acceleration of algorithms 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 internship** Analog Devices, Inc., Greensboro, NC
worked on communications infrastructure team under John Oates,
Systems Engineer. Accompanied project through three hardware revisions.
moved project forward with:
- improved software
 - program to present board capability to customers
 - automation suite to characterize performance of board
 - code maintenance (source control, refactoring)
 - improved hardware
 - maintenance and modification of surface mount PCB components
 - schematic changes (Cadence Allegro PCB Planner)

projects

- since 2017 **computer graphics in MATLAB and C++** instagram (some code on github)
each frame generated individually from mathematical basis
some work with Google's search API in Python, as well
- 2017 **orthographic projection in MATLAB** ECE 592 project (digital image processing)
given a photo of a box and its closest corner in image, program finds faces of
box and projects to create 3-D model
- 2016 **internet of things (IoT) 'car'** ECE 306 project (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**
GPU implementation of row-wise approximate message passing (AMP)
speedup of ~28x achieved with CUDA/C++
- 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

volunteering

- 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)** on campus
offered free help to undergraduates in ECE courses
- 2013-2016 **SOUL Garden volunteer** on campus
student-run garden which donates some food to those in need
- 2015 & 2016 **annual Service Raleigh volunteer** Raleigh
yearly event to bring many volunteers to the Raleigh area

extracurriculars

- 2016-2018 **facilitator/host, Wake Up Raleigh**
mindfulness group with weekly events, community engagement
- 2013-2015 **president, 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
- since 2008 **poetry & music writing**
published in the 49th-51st editions of NCSU's literary magazine