

# Audrow Nash

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## Education

**PhD in Computer Science**, *University of Southern California (USC)*.

GPA: 4.0/4.0

Advisor: Maja Matarić

Courses: computational human-robot-interaction

Estimated 2023

2018 **MS in Electrical Engineering**, *University of Michigan (U-M)*.

GPA: 3.5/4.0

Advisors: David C. Remy, Edwin Olson

Courses: robotic systems lab, machine learning, computer vision, mobile robotics, robot kinematics & dynamics

2014 **BS in Electrical Engineering**, *University of North Carolina at Charlotte (UNC Charlotte)*.

GPA: 3.5/4.0

Advisor: James Conrad

Courses: engineering simulation, embedded system design, sensors and actuators

## Awards and Scholarships

2016 **National Science Foundation, Graduate Research Fellowship (NSF GRFP)**.

2013 **Charlotte Research Scholars Fellowship**.

UNC Charlotte Summer undergraduate research fellowship

## Skills

**Programming** *Competent* in C/C++, Python, Matlab. *Familiar* with Bash, JavaScript, Java, Lua, Simulink, Swift, Common Lisp, Mathematica.

**Software** *Competent* with GIT, LaTeX, Linux/Unix systems. *Familiar* with ROS, AutoDesk, GDB, LCM, Android, iOS, Qt, CMake, Make, Docker.

**Hardware** *Competent* with oscilloscope, multimeter, 3D printers, laser-cutter, soldering iron. *Familiar* with motion-capture systems, CNC machines, reflow soldering oven, casting silicone.

## Experience

05/18–present **Research Assistant**, *USC*, Los Angeles, California, USA.

- Devised and implemented a way for robots to help people achieve their health goals by setting self-regulating behavior. The robot adapts its strategy for helping the person based on estimates of how automatic the desired health behavior is. This approach will be used in an eight-week in-home study with 20 older adults.

- 08/15–05/18 **Research Assistant**, *U-M*, Ann Arbor, Michigan, USA.  
*In the RAM-Lab with Assistant Professor C. David Remy (07/16–05/18):*
- Created a method for performing automatic optimization of control parameters for stable walking and running of a bipedal robot in simulation. *Presented this work at a workshop at IROS 2017.*
  - Wrote a fast 2D rigid body simulator in C++. The simulator uses complementarity-type conditions and a Coulomb friction model. Now used by the lab.
- In the APRIL lab with Professor Edwin Olson (08/15–06/16):*
- Created a small, fast, and inexpensive system for person detection using a thermal camera that recursively used low resolution images to inform searches in images with higher resolution. Implemented in Python and in C.
- 02/15–08/15 **Intern**, *senseFly*, Cheseaux-Lausanne, Vaud, Switzerland.
- Designed and implemented in C++ a scale- and rotation-invariant object recognition system for drones to detect a landing pad.
  - Implemented an algorithm in C++ to solve for a camera's intrinsic parameters. *Deployed in production.*
- 05/13–12/14 **Research Assistant**, *UNC Charlotte*, Charlotte, North Carolina.
- Led a project to have quadrotors establish and hold a formation using only on-board sensing and processing.
  - Led a team with three graduate students (while an undergraduate) (01/14–12/14).
  - Presented research several times, including at the ICINCO conference in Vienna, Austria.
- 09/11–10/12 **Co-Founder and Partner**, *Sortastitious Longboards*, Charlotte, North Carolina.
- Co-founded a company manufacturing and selling longboards (cruising skateboards) with embedded electronics (e.g., hall effect sensor, IMU, LEDs). Sold my part of the company to the other co-founder. Profits surpassed expenses.

## Extracurricular

- 03/14–present **Podcast Director**, *Robohub*.
- Led an international team of around ten people (01/15–present). Oversaw publication of 100+ podcast episodes.
  - Conducted 80+ podcast interviews on topics related to robotics for publication on Robohub. Interviewees include researchers, entrepreneurs, industry professionals, policy makers, and venture capitalists.
  - Funded to attend and conduct interviews at several international conferences each year.
  - Contributed to Robohub through participation on its steering committee. Discussions include business model and finances, collaborations, and long-term direction.
- 07/18–present **Volunteer**, *Silverado at Beverly Place*.
- Volunteered one day a week in Silverado, an assisted living home for older adults with all stages of dementia.
- 08/11–10/12 **President and Chapter Founder**, *National Society of Leadership and Success*, Charlotte, North Carolina, USA.

## Publications

- 2017 **Nash, Audrow**, Yu-Ming Chen, et al. "Learning Stable and Energetically Economical Walking with RAMone". In: *arXiv preprint arXiv:1711.01316*.
- 2014 **Nash, Audrow**, Cory Engel, and James Conrad. "Establishing and maintaining formations of mini quadrotors". In: *SOUTHEASTCON 2014, IEEE*. IEEE, pp. 1–7.
- Nash, Audrow**, Terrill Massey, et al. "Towards establishing and maintaining autonomous quadrotor formations". In: *Informatics in Control, Automation and Robotics (ICINCO), 2014 11th International Conference on*. Vol. 2. IEEE, pp. 635–639.