Audrow Nash

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Education

in progress **PhD in Computer Science**, *University of Southern California (USC)*.
GPA: 3.5/4.0
Advisor: Maja Matarić
Courses: computational human-robot-interaction, algorithms
Estimated 2023

2018 **MS in Electrical Engineering**, *University of Michigan (U-M)*.
GPA: 3.5/4.0
Advisors: David C. Remy, Edwin Olson
Courses: 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**.

Skills

Software Approximate years working with the following:

- Git: 7
- Ubuntu/UNIX: 5
- ROS1: 2
- Docker: 1
- LaTeX: 7
- OpenCV: 2
- ROS2: 1

Less than one year with Gazebo, TensorFlow, LCM, CMake, Make, setuptools, AutoDesk.

Programming Approximate years working with the following:

- Python: 4
- C++: 3
- Common Lisp: 1.5
- Matlab: 4
- Embedded C: 2

Less than one year with C#, JavaScript, Java, Lua, Simulink, Swift, Mathematica.

Hardware Some experience with depth cameras, RGB cameras, thermal cameras, motion-capture systems, oscilloscope, multimeter, 3D printers, laser-cutter, CNC machines, soldering iron, 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.

06/19–08/19 **Intern**, *Halodi Robotics*, Oakland, CA, USA & Moss, Norway.

- Implemented a way of using keyframes for exercises: demonstrating and following with depth camera.
- Devised an approach for human-pose following using a depth camera for arbitrary kinematic chains.
- Wrote ROS2 publisher for Nuitrack Skeleton tracker.

08/15–05/18 **Research Assistant**, *U-M*, Ann Arbor, Michigan, USA.

- Wrote a fast 2D rigid body simulator in C++ and 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. In the RAM-Lab with Assistant Professor C. David Remy (07/16–05/18).*
- 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. *In the APRIL lab with Professor Edwin Olson (08/15–06/16).*

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 research to have several quadrotors establish and hold a formation using on-board sensing and processing. Presented on this work 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 fifteen people (01/15–present). Oversaw publication of 130+ podcast episodes.
- Funded to attend and conduct interviews at several international conferences each year. Conducted 80+ podcast interviews on topics related to robotics.

07/18–10/18 **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.