Alexander Lalejini

Curriculum Vitae

Education

2015–2020 (expected) **Dual PhD in Computer Science and Ecology, Evolutionary Biology, & Behavior**, *Michigan State University*, Advisor: Dr. Charles Ofria.

2011–2015 **Bachelor of Science in Computer Science**, *Mississippi State University*, Advisor: Dr. Cindy Bethel, *GPA – 4.0*.

Experience

Research

Fall 2015 – Present **Digital Evolution Laboratory**, *Michigan State University*, Graduate Student.
Advisor: Dr. Charles Ofria.

My research involves investigating the evolution of phenotypic plasticity in the Avida Digital Evolution Platform. I am interested in leveraging this work in combination with my background in robotics to contribute to the field of evolutionary biology and to solve challenging robotics problems.

Spring 2014 – Summer 2015 **Center for Advanced Vehicular Systems (CAVS)**, *Mississippi State University*, Undergraduate Research Assistant.
Mentors: Dr. Daniel Carruth, Dr. Cindy Bethel.

I worked as part of a research team on the Computational Research for Engineering and Science Ground Vehicles Virtual Testbed Environment Project, which involved the integration of the Robot Operating System and ANVEL, an unmanned ground vehicle simulator. This work resulted in a conference publication at GVSETS 2015. Funded by Army Research Laboratory.

Fall 2013 – Summer 2015 **Social, Therapeutic, & Robotic Systems (STaRS) Laboratory**, *Mississippi State University*, Undergraduate Research Assistant.
Mentor: Dr. Cindy Bethel.

I worked as a project co-lead on the Robot Intent and Control Project in the Social, Therapeutic, and Robotic Systems Laboratory. We studied the effectiveness of different human-robot interfaces that enabled a robot to convey intent to nearby team members and allowed team members to exert supervisory control over the robot. This resulted in a conference publication and presentation. I also assisted in ROS programming and data collection for various other projects in the STaRS Lab.

711 Burcham Drive – East Lansing, MI 48823
(228) 342 8299 • alex@lalejini.com • lalejini.com

Summer 2014 **Laboratory for Autonomous Systems Research (LASR)**, *Naval Research Laboratory, D.C.*, NREIP Summer Intern.
Mentors: Dr. Laura Hiatt, Dr. Greg Trafton.
As an intern at LASR, I researched the use of dynamic cognitive context to improve a robot visual perception system. This work leveraged a biologically plausible object recognition model to identify objects and a cognitive model for cognitive context. I explored different methods of combining the contextual information with the object recognition system.

Work

Summer 2012 **Jet Propulsion Laboratory (JPL)**, *Pasadena, CA*, USRP Summer Intern.
Supervisor: William R. Johnson.
I provided earth science software support for William R. Johnson's remote sensing research group as an intern. During my internship, I wrote a calibration software package for the JPL Near-Nulling Radiometer that is used in JPLâĂŹs continuous monitoring stations at Lake Tahoe, CA/NV and Salton Sea, CA to measure water surface temperature.

Fall 2011 – Spring 2012 **Mississippi State University Physics Department**, *Mississippi State University*, Undergraduate Research Assistant.
Supervisor: Dr. Angelle Tanner.
This experience provided me with my first exposure to undergraduate research. I helped with data preservation, data analysis, and image processing.

Summers of 2011, 2010, & 2009 **Naval Research Laboratory**, *John C. Stennis Space Center, MS*, Computer Clerk (2011), SEAP Summer Intern (2010, 2009).
Supervisor: Dr. Bruce Lin.
As a high school student, these experiences exposed me to the day to day operations of a research team, and ultimately, these experiences influenced my decision to pursue an academic career in science and engineering. I worked on a battlespace management interface project.

Memberships

2015 – Present **Member, International Society for Artificial Life**

2014 – 2015 **Autonomy sub-team lead, State Space Robotics** (formerly Mechanical Bulldawgs)
State Space Robotics represents Mississippi State University in the annual NASA Robotic Mining Competition. I led sub-team meetings, distributed tasks among sub-team members, worked closely with other sub-team leaders, and mentored younger sub-team members. I also maintained accountability to our faculty advisor.

2011 – 2015 **Member, Mississippi State University Shackouls Honors College**

Publications

Christopher R. Hudson, Alexander Lalejini, Brandon Odom, Daniel Carruth, Cindy L. Bethel, J.P. Durst, and C. Goodin. Anvel-ros: The integration of the robot operating system with a high-fidelity simulator. In *Proceedings of the 2015 Ground Vehicle Systems Engineering and Technology Symposium (GVSETS)*, 2015.

Alexander Lalejini, Dexter Duckworth, Richard Sween, Cindy L. Bethel, and Daniel Carruth. Evaluation of supervisory control interfaces for mobile robot integration

with tactical teams. In *Advanced Robotics and its Social Impacts (ARSO), 2014 IEEE Workshop on*, pages 1–6. IEEE, 2014.

Posters

Alexander Lalejini. Robot Control. Bagley College of Engineering Undergraduate Poster Competition. April 2014. Mississippi State University, Starkville, MS.

Awards & Honors

2015 **University Distinguished Fellowship**
Awarded by Michigan State University to 20 out of approximately 500 incoming PhD students.

2015 **BEACON Science and Technology Center Top Up Fellowship**
Awarded by BEACON Center for Evolution in Action to incoming graduate students.

2015 **Stephen D. Lee Scholar**
Awarded by Mississippi State University to graduating undergraduates with a cumulative 4.0 GPA.

2015 **James Worth Bagley College of Engineering Student Hall of Fame**
Awarded by the Bagley College of Engineering at Mississippi State University to students who have demonstrated superior academic achievement, leadership, service, and character.

2015 **Computing Research Association Outstanding Undergraduate Male Researcher Honorable Mention**
Awarded to undergraduate students in North American universities who show outstanding research potential in an area of computing research.

2014 **Bagley College of Engineering Undergraduate Poster Competition Meritorious Poster Award**
Poster title: Robot Control

Service & Outreach

Fall 2015 – Present — Volunteer, BEACON Outreach Activities
I am involved in BEACON outreach activities in which we communicate science to the public.

Fall 2013 – Spring 2015 — Volunteer, Monthly SWAT Training Exercises
I volunteered in monthly training exercises with the Starkville, MS Police Department SWAT team in coordination with the Social, Therapeutic, and Robotic Systems Laboratory. We helped the team train on doing slow and methodical searches of large buildings. We would also bring the labâĂŹs SWAT robot to help the team train.

2014 Volunteer Poolside Judge, National SeaPerch Challenge