Massimiliano Iaschi

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EDUCATION

Georgia Institute of Technology, Atlanta, GA *Aug 2021–May 2026*
B.S. in Mechanical Engineering GPA: 3.97/4.00 (Major: 4.00/4.00)
Minors: Robotics, Biology

Liceo Scientifico Statale Stanislao Cannizzaro, Rome, Italy *Sep 2016–Jul 2021*
Diploma di Esame di Stato GPA: 9.85/10 (Final Exam: 100/100)

RELEVANT EXPERIENCE

Robotic Systems Lab (RSL), Visiting Researcher, ETH Zurich, Switzerland Aug 2025–Present
Advisor: Prof. Marco Hutter, Prof. Baxi Chong; Mentor: Dr. Robert Baines.
Research objective: enabling lizard-like shape-morphing robots that adapt their morphology to the terrain.

– Co-design of lizard-like robots to optimize locomotion across varied terrains: using robotics simulation and learning to understand how morphological parameters interact with one another, with control policies, and with environmental conditions.

CRAB Lab, Bio-Inspired Robotics Undergraduate Researcher, Georgia Tech, USA Mar 2023–Present
Advisor: Prof. Daniel I. Goldman; Mentor: Prof. Baxi Chong, Juntao He (PhD student).
Research objective: leveraging mechanical intelligence to enhance multi-legged robotic locomotion performance in complex environments.

– Characterized Scuttle, a multi-segmented C-legged robot, across flat, granular, and rugged terrains via robophysical experiments, RFT, and geometric-mechanics modeling; developed multiple open-loop controllers. Co-led a journal manuscript (in preparation) with PhD student Jianfeng Lin showing that synchronizing clock-driven leg dynamics with coordinated horizontal/vertical body waves yields 4× speed gains over baseline control and enables robust locomotion on previously impassable terrains.

– Led full-stack development of a multi-segmented robot coupling vertical and peristaltic traveling waves via a cable-driven compliant joint; modeled peristalsis, designed open-loop control, and led robotics/biological experiments and manuscript preparation. Rugged-terrain experiments showed sensor-free peristalsis substantially improves obstacle negotiation vs. a no-peristalsis baseline. Informed later integration of peristaltic joints on Prof. Goldman's startup's multi-legged platform (Oct 2025), demonstrating exceptional traversal of entangled environments.

– Contributed to the mechatronic design, contact-sensor integration, and prototyping of centipede-inspired robots featuring foot sensors and bio-inspired tactile antennae; assisted in developing a closed-loop control framework based on tactile sensing that enabled the robot to climb obstacles up to five times its own height; supported lab and field experiments.

– Designed, prototyped, and tested a hexapod robot used to develop a novel contact planning framework via spin models duality; foot design and open-loop controller development to enable stair-climbing in low-torque multi-legged robotic platform through passive peristaltic

compliance; designed and prototyped a soft antenna to model centipedes' active tactile sensing; designed and assembled various experimental setups for high speed cameras to conduct experiments on real centipedes in various conditions, conducted experiments, and analyzed biological experiments data.

Autonomous Systems Lab (ASL), Visiting Researcher, ETH Zurich, Switzerland May–Aug 2023

Advisor: Prof. Roland Siegwart; Mentor: multiple mentors.

– Contributed to the autonomous underwater robot Proteus: conducted independent field tests in natural water environments; designed a self-retracting locking leg mechanism to simplify land-to-water deployment; performed CFD studies; and proposed high-level concepts for a soft-robotic tail.

PoWeR Lab, Bio-mechatronics Undergraduate Researcher, Georgia Tech, USA Feb 2022–Apr 2023

Advisor: Prof. Gregory Sawicki; Mentor: Amro Alshareef (PhD student).

– Developed and tuned PID controllers in Simulink for torque tracking during center-of-mass perturbation experiments using Stanford's open-source Bump'em platform to study human balance.

– Assisted with experiments and analysis comparing joint dynamics and whole-body angular momentum under impulse perturbations of varying magnitude, shape, and direction, for waist vs. foot perturbations using instrumented treadmills (Bump'em and CAREN respectively) and motion-capture systems. Implemented real-time gait-phase estimation scripts using motion-capture feedback to deliver gait-phase–informed perturbations.

– Contributed to human-subject experiments in a biomechanics study (Dr. Lindsey Trejo's PhD thesis) investigating how different spring-like and motor-like torque profiles on bilateral powered ankle exoskeletons (Dephy) affect gait mechanics and walking energy cost in young and older adults, including data collection and analysis with dynamometry, ultrasound, EMG, motion capture, instrumented treadmill, and indirect calorimetry.

Siena Robotics & Systems Lab, Summer Robotics Intern, Univ. of Siena, Italy May–Jul 2022

Advisor: Prof. Domenico Prattichizzo; Mentor: Nicole D'Aurizio (PhD student).

– Validating the hypothesis that thermal modulation at the fingertip can create the illusion of a broader contact surface for robotic haptic applications: designed and assembled a simple custom hardware setup for generating thermal illusions, and developed feedback temperature control systems in LabVIEW to enable real-time modulation of the haptic perception, while taking two Georgia Tech courses.

SELECTED PUBLICATIONS

* EQUAL CONTRIBUTION

– **Iaschi, M.***, Lin, J.*, Chong, B., Dolfi, L., He, J., Nienhusser, V., Soto, D., Goldman, D. I. *Control and dynamics of an elongate multisegmented C-leg robot.* Manuscript in preparation (journal).

– **Iaschi, M.***, Chong, B.*, Wang, T., Lin, J., He, J., Soto, D., Xu, Z., Goldman, D. I. *Addition of a Peristaltic Wave Improves Multi-Legged Locomotion Performance on Complex Terrains.* IEEE Int. Conf. on Robotics and Automation (ICRA), Atlanta, 2025.

– He, J., Chong, B., **Iaschi, M.**, Nienhusser, V., Ha, S., Goldman, D. I. *Tactile Sensing En-*

ables Vertical Obstacle Negotiation for Elongate Many-Legged Robots. Robotics: Science and Systems (RSS), 2025.

– Teder, E.*, Chong, B.*, He, J., Wang, T., **Iaschi, M.**, Soto, D., Goldman, D. I. *Effective Self-Righting Strategies for Elongate Multi-Legged Robots.* IEEE Int. Conf. on Robotics and Automation (ICRA), Atlanta, 2025.

– Soto, D.*, Pierce, C.*, Erickson, E., Diaz, K., **Iaschi, M.**, Lee, A., Goldman, D. I. *Legged Locomotion in Lattices: Centipede Traversal of Obstacle-Rich Environments. Annals of the New York Academy of Sciences*, 2025. (Accepted).

CONFERENCE ABSTRACTS

– Lin, J., **Iaschi, M.**, Chong, B., Dolfi, L., He, J., Nienhusser, V., Soto, D., Goldman, D. I. "The dynamics of an elongate multisegmented C-leg robot." Conference abstract, APS March Meeting, Denver, 2026.

– He, J., Chong, B., **Iaschi, M.**, Nienhusser, V., Ha, S., Goldman, D. I. "Tactile Sensing Enables Vertical Obstacle Negotiation for Elongate Many-Legged Robots." Conference abstract, Robotics: Science and Systems (RSS), 2025.

– **Iaschi, M.**, Chong, B., Wang, T., Lin, J., He, J., Soto, D., Xu, Z., Goldman, D. I. "Addition of a Peristaltic Wave Improves Multi-Legged Locomotion Performance on Complex Terrains." Conference abstracts, IEEE Int. Conf. on Robotics and Automation (ICRA), Atlanta; APS March Meeting, Anaheim; SICB Annual Meeting, Atlanta, 2025.

– Teder, E., Chong, B., He, J., Wang, T., **Iaschi, M.**, Soto, D., Goldman, D. I. "Effective Self-Righting Strategies for Elongate Multi-Legged Robots." Conference abstract, IEEE Int. Conf. on Robotics and Automation (ICRA), Atlanta, 2025.

– Chong, B., Luo, D., Wang, T., Margolis, G., Xu, Z., **Iaschi, M.**, Agrawal, P., Soljačić, M., Goldman, D. I. "Geometry of contact: contact planning for multi-legged robots via spin models." Conference abstract, APS March Meeting, 2024.

CONFERENCE PRESENTATIONS

– **Iaschi, M.** "Addition of a Peristaltic Wave Improves Multi-Legged Locomotion" — IEEE Int. Conf. on Robotics and Automation (ICRA), Atlanta, 2025.

– **Iaschi, M.** "Addition of a Peristaltic Wave Improves Multi-Legged Locomotion" — APS March Meeting, Anaheim, 2025.

– **Iaschi, M.** "Addition of a Peristaltic Wave Improves Multi-Legged Locomotion" — SICB Annual Meeting, Atlanta, 2025.

– **Iaschi, M.** "Centipede locomotion strategies in obstacle-rich terrains" — iPoLS Annual Meeting, Trieste, Italy, June 2024.

PEER REVIEW EXPERIENCE

Reviewer for one bipedal-locomotion-related manuscript (ICRA 2025) and selected reviewer for one soft-robotics manuscript (RoboSoft 2025).

LEADERSHIP & OUTREACH

Co-founder, FISA – Italian Student Association, Georgia Tech 2025–Present

– Co-founded the first Italian student association at Georgia Tech, now with more than 50 members, to support students in their Italy–US transition through mentoring, community events,

and practical guidance. Currently developing a framework to facilitate internship opportunities for Italian students with Italian and American companies, and to provide physical spaces in Atlanta for Italian startups, young professionals, and community events.

ADDITIONAL SKILLS

Technical:
Python, C++/ROS, MATLAB, PyTorch, Isaac Sim/Lab, Mujoco, Optuna, SolidWorks, Git, Linux, mechatronic prototyping (3D printing, laser cutting, water jet cutting, soldering), Arduino, Simulink, LabVIEW, LaTeX.
Selected Coursework:
Robotics & Mechatronics: Autonomous Mobile Robots, Automation and Robotics, Fundamentals of Mechatronics (Spring 2026), Creative Decisions and Design;
Modeling & Controls: Modeling and Control of Motion Systems (Spring 2026), System Dynamics, Dynamics of Rigid Bodies, Differential Equations, Statistics and Applications;
Bio-Inspired Design: Bio-Inspired Design, Behavioral Biology.
Languages:
English and Italian (fluent); Spanish (B1); French (A2).
Creative:
Currently close to the completion of an adventure novel for young adults, whose story revolves around young characters passionate about different fields of knowledge including highly technical content about engineering, science, music, art, and history. The objective is to inspire the new generation to discover their own passions through literature.