

Rivers Ingersoll

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RiversIngersoll.com

EDUCATION

Stanford University

Ph.D., Mechanical Engineering, 2018.

Qualifying exam subjects: Robotics and Kinematics; Automatic Controls; Fluid Mechanics.

Stanford University Graduate School of Business

Stanford Ignite, Certificate Program in Innovation and Entrepreneurship, 2017.

Stanford University

M.S., Mechanical Engineering, 2014.

Georgia Institute of Technology

B.S., Mechanical Engineering, 2012. Highest Honors.

Georgia Tech Lorraine

Two semesters of studying abroad in Metz, France.

PROFESSIONAL EXPERIENCE

Apple, Inc.

Haptics Mechanical Design Engineer.

April 2018-Present

SPECIAL SKILLS

Product Design

Responsible for the design of subcomponents in some of Apple's most popular products including the iPhone and Watch.

Traveled to vendors in Asia to provide on-site build support in factories up to five times each year.

Designed reliability test procedures, performed failure analysis and identified corrective actions to improve product design and manufacturing process.

Manufacturing

Mill, Lathe, Drill Press, band saw, 3D printer, carbon fiber composite layups, laser cutter, 80/20 assembly, CNC machine.

Operated a Haas OM-2a office mill CNC machine to manufacture flexural springs and sensor mounts for research projects.

Software

Expert in MATLAB (data acquisition, data analysis, modeling, figure design, custom GUIs, automated image processing).

Highly proficient in NX, Teamcenter, Solidworks, HSMWorks (CAM), Photoshop, Illustrator, Phantom Camera Control.

Some experience in C++, HTML, Inventor, ANSYS Fluent, LabVIEW, Final Cut Pro, and Adobe Premiere Pro.

Leadership

Organized the 2017 Stanford Mechanical Engineering Research Conference designed to foster inter lab collaborations.

Mentored visiting international students and Stanford undergrads assisting my research project over multiple years.

Identified, negotiated and purchased relevant machine shop tools and hardware to outfit newly started research lab.

Entrepreneurial

Participated in the Stanford Graduate School of Business Ignite program during the summer of 2017. Exposed to core business skills such as marketing, operations, strategy, accounting, finance, and economics, and applied skills such as design thinking, negotiation, teamwork, public speaking, leadership, and pitching.

SELECTED PUBLICATIONS, PRESENTATIONS and AWARDS

Science Advances 2018. Paper: Biomechanics of hover performance in Neotropical hummingbirds versus bats. ([Paper](#))

Journal of Experimental Biology 2018. Paper: How the hummingbird wingbeat is tuned for efficient hovering. ([Paper](#))

Society for Integrative and Comparative Biology 2018. Presentation: How neotropical hummingbird versus bat species generate lift to hover. Honorable Mention for best student talk. ([Abstract](#))

American Physical Society Division of Fluid Dynamics 2017. Presentation: How neotropical hummingbird versus bat species generate lift to hover. ([Abstract](#))

Bioinspiration & Biomimetics 2017. Paper: Design and analysis of aerodynamic force platforms for free flight studies. ([Paper](#))

Gordon Research Conference: Movement Ecology of Animals 2017. Poster: How Hummingbirds Lift Bodyweight During Hovering Flight.

Las Cruces Biological Station Amigos Newsletter 2016. Article: Comparing the Biomechanics of Flight Between Species of Hummingbird. ([Newsletter](#))

Jasper Ridge Biological Preserve: Invited Lecture 2015. Presentation: *In vivo* measurements of lift force in hovering hummingbirds.

Journal of The Royal Society, Interface 2015. Paper: *In vivo* recording of aerodynamic force with an aerodynamic force platform: from drones to birds. ([Paper](#))

The Thermal & Fluid Sciences Affiliates and Sponsors Conference 2013. Presentation: Uncertainty analysis in thermal simulations of turbine blades.

Henry Ford II Scholar Award 2011. [Award](#): Georgia Tech recognition of the Mechanical Engineer with the best academic record after their third year of study.

MEDIA COVERAGE

BioGraphic and California Academy of Sciences 2016. [Lens of Time: How Hummingbirds Hover](#)

National Geographic Magazine July 2017. [Unlocking the Secrets Behind the Hummingbird's Frenzy](#)

Stanford News 2018. [Stanford engineers study hovering bats and hummingbirds in Costa Rica](#)

Science News 2018. [How nectar bats fly nowhere](#)

Jasper Ridge Biological Preserve 2016. [How hummingbirds hover](#)

Reuters 2013. [Aerial engineers seek inspiration from slo-mo hummingbirds](#)

CNN 2013. [Unlocking secrets of bird flight to build flying robots](#)

Stanford News 2013. [Stanford students capture the flight of birds on very high-speed video](#)

Stanford News 2015. [Stanford engineers develop a device for measuring how birds take flight](#)

BBC 2015. [Riddle of flying bird's weight solved by scientists](#)

Economist 2015. [Flight details](#)

New York Times 2015. [Training Birds to Aid a Scientific Breakthrough](#)