

Eric Gilbertson

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Education

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| <ul style="list-style-type: none">• Massachusetts Institute of Technology
<i>Doctor of Philosophy (Ph.D.) in Mechanical Engineering. Advisor: Dr. Franz Hover</i>
<i>Master of Science in Mechanical Engineering. Advisor: Dr. Franz Hover</i>
<i>Bachelor of Science in Mechanical Engineering, Mathematics Minor.</i> | Cambridge, MA
2010 – 2014
2008 – 2010
2004 – 2008 |
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Work Experience

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| <ul style="list-style-type: none">• Seattle University
<i>Assistant/Associate Teaching Professor</i><ul style="list-style-type: none">– Taught undergraduate and graduate Civil Engineering and Mechanical Engineering classes including Statics, Dynamics, Dynamic Systems, Advanced Controls Systems, Integrated Design, Advanced Dynamics, Machine Shop, Intro to Engineering, and Mountain Surveying.• The Seattle Colleges
<i>Lecturer</i><ul style="list-style-type: none">– Taught undergraduate classes Math for Engineers, Math for Automechanics, Precalculus, Calculus I,II, III.– Taught Probability and a laboratory-based Physics class for Danish high school students.– Taught Trigonometry for Bridge to Prosperity Program for at-risk youth.• MIT-Skoltech Program
<i>Lecturer</i><ul style="list-style-type: none">– Developed and taught the class “Design of Precision Machines” for graduate students at the Skolkovo Institute of Science and Technology in Moscow, Russia, through the MIT-Skoltech program.• MIT Hover Research Group - Autonomous Underwater Vehicle Control
<i>Graduate Research Assistant</i><ul style="list-style-type: none">– Developed a control strategy that can be used on marine robots that rely on lossy acoustic communication. Tested strategy on robotic kayaks in the Charles River, Boston and in Boston Harbor. Work funded by Office of Naval Research.• MIT Hover Research Group - Gas Lift Safety Valve Design
<i>Graduate Research Assistant</i><ul style="list-style-type: none">– Designed, prototyped, and tested a novel thermally-actuated safety valve for subsea oil wells, in collaboration with Chevron.• MIT
<i>Mountaineering Guide</i><ul style="list-style-type: none">– Volunteer mountaineering guide for the MIT Outing Club, guiding technical alpine rock and ice climbs, backcountry skiing, winter camping, for students. Over 100 trips led.• NASA Jet Propulsion Laboratory
<i>Mechanical Engineering Intern</i><ul style="list-style-type: none">– Worked with team of NASA engineers to design a climate data collection probe to potentially be sent to Mars.• United States Forest Service
<i>Trail Crew Worker</i><ul style="list-style-type: none">– Worked on a crew of forest service rangers and trail crew to maintain trails in the Sierra Nevada mountains of Eastern California. | Seattle
2018-2025

Seattle
2016-2018

MIT
2015

MIT
2012 – 2014

MIT
2009 – 2011

Cambridge, MA
2005-2015

Pasadena, CA
2007

Bishop, CA
2005 |
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Awards and Honors

- Snow Leopard award for climbing all 7000m peaks of the former Soviet Union (2023)
- Fastest Known Time of the Year (FKTOY) 3rd place award for Rocky Mountain Slam (2020).
- DeFlorez Award in MIT Graduate Engineering Design for gas lift safety valve (2011).
- Awarded Kentucky Colonel honor for Hurricane Katrina relief work (2008).

Other Skills

- **Software:** QGIS, MATLAB, SolidWorks, Labview
 - Served as president and member of the board of directors of the MIT Outing Club (>1500 members)(2007-2014).
 - World-record-holding mountaineer and juggler.
 - Have completed over 90 mountaineering first ascents, documented in the American Alpine Journal and Canadian Alpine Journal (2015-2025)
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Mountaineering/Surveying Publications

- **Gilbertson, E., Abatzoglou, T., Stanchak, K., Hotaling, S.** "Rapid Contemporary Shrinking and Loss of Ice-capped Summits in the Western USA," Arctic, Antarctic, and Alpine Research Journal (accepted for publication)
- **Gilbertson, E., Gilbertson, M.** "Determination of new national highpoints of five Asian and African countries – Saudi Arabia, Uzbekistan, Gambia, Guinea-Bissau, and Togo," Progress in Physical Geography: Earth and Environment (in review)
- **Gilbertson, E., Signani, L., Stanchak, K.** "Mount Rainier Elevation Survey 2024," National Park Service Science Report Series (submitted for review Dec 2024)
- **Gilbertson, E., Hensley, R., Kirmse, A., Bretherton, K., Stanchak, K.** "LiDAR Accuracy on Mountain Summits," Progress in Physical Geography: Earth and Environment (in review)
- **Gilbertson, E., Stanchak, K., Hotaling, S.** "Contemporary Shrinking of Colombia's Highest Mountains: Pico Simón Bolívar and Pico Cristóbal Colón," Geografiska Annaler: Series A, Physical Geography, (in review)
- **Gilbertson, E.** "Pico Simon Bolivar, New Country Highpoint of Colombia," The American Alpine Journal, 2025
- **Gilbertson, E.** "Mount Rainier and Other Icecap Peaks, Elevation Surveys," The American Alpine Journal, 2025
- **Gilbertson, E.** Greenland, Umiammakku Nunaat Region, West Coast, First southeast-northwest traverse, plus various first ascents," The American Alpine Journal, 2025
- **Gilbertson, E.** "Choral Peak, North Face," The American Alpine Journal, 2025
- **Gilbertson, E.** "Boston Peak, First Winter Ascent," The American Alpine Journal, 2025
- **Gilbertson, E.** "Surveying Washington's Top 100 Peaks, Updated Results" The Evergreen State Surveyor, Summer 2025
- **Gilbertson, E.** "Surveying Washington's Top 100 Peaks," The Evergreen State Surveyor, Spring 2024
- **Gilbertson, E.** "Alpomish, First Ascent and New Country Highpoint," The American Alpine Journal, 2024
- **Gilbertson, E.** "Hard Mox, First Winter Ascent," The American Alpine Journal, 2024
- **Gilbertson, E.** "British Empire Range," The Canadian Alpine Journal, 2018.
- **Gilbertson, E.** "Many First Ascents near Barbeau Peak," The American Alpine Journal, 2018
- **Gilbertson, E.** "Third Time a Charm," The Canadian Alpine Journal, 2018.
- **Gilbertson, E.** "Thunder Mountain West Face to North Face," The American Alpine Journal, 2018
- **Gilbertson, E.** "Nirvana," The Canadian Alpine Journal, 2017.
- **Gilbertson, E.** "Thunder Mountain (Mt. Nirvana), Unsupported Ascent, and Peak 46," The American Alpine Journal, 2017
- **Gilbertson, E.** "Thunder Mountain" The Canadian Alpine Journal, 2016
- **Gilbertson, E.** "Thunder Mountain (Mt Nirvana) Attempt and Other Ascents" The American Alpine Journal, 2016

Grants

- American Alpine Club Research Grant for "The Effect of Climate Change on the Elevations Icecap Peaks in the Contiguous US," 2025
- American Alpine Club Research Grant for "The Effect of Climate Change on the Elevations and Prominences of Washington's 100 Highest Peaks," 2024

Other Publications

- **Gilbertson, E., Hover, F.,** "Describing Functions for Scalar Information Channels Subject to Packet Loss and Quantization," Journal of Dynamic Systems, Measurement, and Control, 1 July 2015.
- **Gilbertson, E.,** Describing Functions for Information Channels Subject to Packet Loss and Quantization, Ph.D. Thesis, Massachusetts Institute of Technology, 2014.
- **Gilbertson, E., Hover, F.,** "Limit Cycling in Control of Underwater Vehicles Caused by Lossy Quantized Communication Channels," International Symposium on Unmanned Untethered Submersible Technology (UUST), Portsmouth, NH, USA, Aug 2013.
- **Gilbertson, E., Reed, B., Leighton, J., Cheung, M., Hover, F.,** "Experiments in Dynamic Control of Autonomous Marine Vehicles Using Acoustic Modems," International Conference on Robotics and Automation (ICRA), Karlsruhe, Germany, May 2013.
- **Gilbertson, E., F., Hover, and B. Freeman,** "A Thermally-Actuated Gas Lift Safety Valve," *SPE Production and Operations*, 28, no. 01 (2013): 77-84.
- **Gilbertson, E. and Hover, F.,** "AC Transmission System Planning on Large Scale and Realistic Systems," IEEE PES International Conference on Power Systems Technology Powercon, Auckland, New Zealand Oct-Nov 2012.

- **Gilbertson, E.**, F. Hover, and B. Freeman, "Sharp Phase Change in Shape Memory Alloy Thermal Actuators for Subsea Flow Control," ASME International Conference on Offshore Mechanics and Arctic Engineering (OMAE), Rio de Janeiro, Brazil, July 2012.
 - **Gilbertson, E.**, F. Hover, J. Arellano, and B. Freeman, "Design of a Thermally-Actuated Gas Lift Safety Valve," ASME International Conference on Offshore Mechanics and Arctic Engineering (OMAE), Rotterdam, Netherlands, June 2011.
 - **Gilbertson, E.**, Gas Lift Valve Failure Mode Analysis and the Design of a Thermally-Actuated Positive-Locking Safety Valve, Masters Thesis, Massachusetts Institute of Technology, 2010.
 - **Gilbertson, E.**, F. Hover, and E. Colina, "Failure Mode and Sensitivity Analysis of Gas Lift Valves," 29th International Conference on Ocean, Offshore, and Arctic Engineering (OMAE), Shanghai, China, June 2010.
 - Kelley L. C., **Gilbertson, E.** Sheikh, A., Eppinger, S., and Dubowsky, S., "On the Feasibility of Solar Powered Irrigation," Journal of Renewable and Sustainable Energy Reviews, 14 December 2010, 2669-2682.
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Issued Patents (4)

- **Gilbertson, E.**, Hover, F., Freeman, B., and Arellano, J., "Sharp Phase Change Shape Memory Alloy Thermal Actuator," US Patent No **9638343 B2**, issue date May 2, 2017.
- Yu, C., **Gilbertson, E.**, and Hover, F., "Gas-Lift Safety Valve Actuated by a Sensor," US Patent Application No **9284825**, issue date March 15, 2016.
- **Gilbertson, E.**, Yu, C., and Hover, F., "Apparatus for Adjusting Shape Memory Alloy Transition Temperatures to Track Slowly Changing Ambient Temperature," US Patent No **9145974**, issue date Sept 29, 2015.
- **Gilbertson, E.** and Hover, F., "Thermally-Actuated Gas Lift Safety Valve," US Patent No **8,800,590 B2**, issue date Aug 12, 2014.