Eric Gilbertson

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Education

- **Massachusetts Institute of Technology** — **Cambridge, MA**
  Doctor of Philosophy (Ph.D.) in Mechanical Engineering. Advisor: Dr. Franz Hover — *2010 – 2014*
  Master of Science in Mechanical Engineering. Advisor: Dr. Franz Hover — *2008 – 2010*
  Bachelor of Science in Mechanical Engineering, Mathematics Minor. — *2004 – 2008*

Work Experience

- **Seattle University** — **Seattle**
  Assistant/Associate Teaching Professor — *2018-2025*
  - 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** — **Seattle**
  Lecturer — *2016-2018*
  - 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** — **MIT**
  Lecturer — *2015*
  - 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** — **MIT**
  Graduate Research Assistant — *2012 – 2014*
  - Developedacontrolstrategythatcanbeusedonmarinerobotsthatrelyonlossyacousticcommunication. Testedstrategy on robotic kayaks in the Charles River, Boston and in Boston Harbor. Work funded by Oÿce of Naval Research.
- **MIT Hover Research Group -Gas Lift Safety Valve Design** — **MIT**
  Graduate Research Assistant — *2009 – 2011*
  - Designed, prototyped, and tested a novel thermally-actuated safety valve for subsea oil wells, in collaboration with Chevron.
- **MIT** — **Cambridge, MA**
  Mountaineering Guide — *2005-2015*
  - 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** — **Pasadena, CA**
  Mechanical Engineering Intern — *2007*
  - Worked with team of NASA engineers to design a climate data collection probe to potentially be sent to Mars.
- **United States Forest Service** — **Bishop, CA**
  Trail Crew Worker — *2005*
  - Worked on a crew of forest service rangers and trail crew to maintain trails in the Sierra Nevada mountains of Eastern California.

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)

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 PhysicalGeography: EarthandEnvironment(inreview)
- **Gilbertson, E., Stanchak, K., Hotaling, S.** "Contemporary Shrinking of Colombia's Highest Mountains: Pico Simón Bolivar 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 E˙ect of Climate Change on the Elevations Icecap Peaks in the Contiguous US," 2025
- American Alpine Club Research Grant for "The E˙ect 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 O˙shore Mechanics and Artic Engineering (OMAE), Rio de Janiero, 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 O˙shore 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, O˙shore, 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.

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.