CONTACT INFORMATION	Address:	Etcheverry Hall 2167, University of California, Berkeley CA 94720
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EDUCATION	2013-2019	Doctor of Philosophy, Mechanical Engineering University of California, Berkeley, CA USA GPA: 4.00/4
	2015-2019	Master's degree, Mathematics University of California, Berkeley, CA USA GPA: 4.00/4
	2011-2013	Master's degree, Mechanical and Aerospace Engineering Illinois Institute Of Technology, Chicago, IL USA GPA: 4.00/4

WORK EXPERIENCES	2023-present	Postdoctoral Scholar, International Computer Science Institute Postdoctoral Scholar, University of California, Berkeley
	2020-2022	Postdoctoral Scholar, University of California, Berkeley
	2015-2019	Graduate Student Researcher, University of California, Berkeley
	2014-2015	Graduate Student Instructor, University of California, Berkeley
	2013-2014	Graduate Student Researcher, University of California, Berkeley
	2011-2013	Graduate Research Assistant, Illinois Institute of Technology

AWARDS	2016	Outstanding Graduate Student Instructor Award, University of California, Berkeley

PUBLICATIONS	2023	Ameli, S., and Shadden, S. C. "A Singular Woodbury and Pseudo-Determinant Matrix Identities and Application to Gaussian Process Regression". *Applied Mathematics and Computations* 452, 128032.
	2022	Ameli, S., and Shadden, S. C. "Interpolating Log-Determinant and Trace of the Powers of Matrix $A + tB$". *Statistics and Computing* 32, 108.
	2022	Ameli, S., and Shadden, S. C., "Noise Estimation in Gaussian Process Regression". *arXiv*: 2206.09976 [cs.LG]. *Under peer review.*
	2022	Ameli, S., and Shadden, S. C., "An Objective Spatiotemporal Model for Multivariate Stochastic Processes". *arXiv*: 2210.4556754 [stat.ME]. *To be submitted.*
	2019	Ameli, S., "Riemannian Geometry of Nonlinear Deformation," *Ph.D dissertation*, University of California, Berkeley.
	2019	Ameli, S., "Spectral Representation of Solenoidal Fields," *Master's thesis*, University of California, Berkeley.
	2019	Ameli, S., Shadden, S. C., "A Transport Method for Restoring Incomplete Ocean Current Measurements," *Journal of Geophysical Research: Oceans*, 124, 227-242.
	2014	Ameli, S., Desai, Y., and Shadden, S. C., "Development of an Efficient and Flexible Pipeline for Lagrangian Coherent Structure Computation," *Topological Methods in Data Analysis and Visualization III, Mathematics and Visualization*, P.-T. Bremer et al. (eds.). Springer.

Invited Seminar Talks

2023 "Generalized Inverses and Randomized Algorithms for Gaussian Process Models", *Computing Sciences Seminars*, Lawrence Berkeley National Laboratory.

2023 "Generalized Inverses and Randomized Algorithms for Gaussian Process Models", *Linear Algebra and Optimization Seminars*, Institute for Computational & Mathematical Engineering, Stanford University.

2019 "Spectral Representation and Approximation of Solenoidal Fields", *Berkeley Fluid Seminar*, University of California, Berkeley.

Conference Presentations

2021 Ameli, S., Shadden, S. C., "Supervised Learning of Solenoidal Flows by Modal Analysis", *SIAM conference on Application of Dynamical Systems*, Snowbird UT.

2020 Ameli, S., Shadden, S. C., "Reconstruction of Incomplete Spatial Data with Feature Preserving Information Transport", *American Geophysical Union, Ocean Science Meeting*, San Diego, CA.

2020 Ameli, S., Peacock, T., Shadden, S. C., "Stochastic Trajectory Predictions from ADCP Velocity Measurements", *American Geophysical Union, Ocean Science Meeting*, San Diego, CA.

2019 Ameli, S., Shadden, S. C., "Theory and Computation of Nonlinear Deformation Spectra of Flows with Geophysical Applications," *SIAM conference on Application of Dynamical Systems*, Snowbird UT.

2018 Filippi, M., Allshouse, M., Ameli, A., Haley, P. J., Kulkarni, C., Lermusiaux, P. F. J., Peacock, T., Rypina, I., Serra, M., "Experimental comparison of coherent structures methods applied to oceanic flows," *71th annual meeting of American Physical Society, Division of Fluid Dynamics*, Atlanta, GA.

2018 Frank, S. L., Ameli, S., Szeri, A. J., Shadden, S. C., "Filtering Flow Measurements in the Left Ventricle Using Modal Analysis," *71th annual meeting of American Physical Society, Division of Fluid Dynamics*, Atlanta, GA.

2018 Ameli, S., Frank, S. L., Shadden, S. C., "Spectral Representation and Filtering of Incompressible Flow," *71th annual meeting of American Physical Society, Division of Fluid Dynamics*, Atlanta, GA.

2018 Ameli, S., Shadden, S. C., "An Online Gateway for Lagrangian Analysis of Ocean Surface Transport," *American Geophysical Union, Ocean Science Meeting*, Portland, OR.

2018 Ross, S. D., Rypina, I., Shadden, S. C., Peacock, T., Lermusiaux, P. F. J., Allshouse, M., Gawarkiewicz, G., Kirincich, A., Serra, M., Filippi, M., Schmale, D. G., Woolsey, C., Haley, P. J., Jana, S., Mirabito, C., Kulkarni, C., Dutt, A., Gupta, A., Hajj Ali, W., Ameli, S., "Targeted Drifter Deployments Around Martha's Vineyard to Uncover Lagrangian Transport Structures," *American Geophysical Union, Ocean Sciences Meeting*, Portland OR.

2018 Frank, S. L., Ameli, S., Szeri, A. J., Shadden, S. C., "De-noising of Three-Dimensional Velocity Fields Using Modal Analysis," *8th World Congress of Biomechanics*, Dublin, Ireland.

2017 Ameli, S., Shadden, S. C. "A Vorticity Transport Model to Restore Spatial Gaps in Velocity Data," *70th annual meeting of American Physical Society, Division of Fluid Dynamics*, Denver, CO.

2017 Frank, S. L., Ameli, S., Szeri, A. J., Shadden, S. C., "Three-Dimensional Velocity Field De-Noising using Modal Projection," *70th annual meeting of American Physical Society, Division of Fluid Dynamics*, Denver, CO.

2016 Ameli, S., Shadden, S. C., "Computation of the Deformation Spectrum for Flows on a Sphere," *69th annual meeting of American Physical Society, Division of Fluid Dynamics*, Portland, OR.

	2014	Ameli, S., Shadden, S. C., "An Accurate Computation of the Flow Map Gradient," *Berkeley/Stanford CompFest*, Stanford University, Palo Alto, CA.
	2014	Ameli, S., Shadden, S. C., "An Accurate Computation of the Flow Map Gradient," *67^{th} annual meeting of American Physical Society, Division of Fluid Dynamics*, San Francisco, CA.
	2013	Ameli, S., Shadden, S. C., "An Extension of Shear and Strain LCS Concepts to Higher Dimensions," *66^{th} annual meeting of American Physical Society, Division of Fluid Dynamics*, Pittsburgh, PA.
	2013	Ameli, S., Shadden, S. C., "Software Development for Lagrangian Coherent Structure Computation," *Berkeley/Stanford CompFest*, University of California, Berkeley, CA.
	2013	Shadden, S. C., Ameli, S., Desai, Y., "Development of an Efficient and Flexible Pipeline for Lagrangian Coherent Structure Computation," *SIAM conference on Application of Dynamical Systems*, Snowbird UT.

Services

Peer reviewer for the journals listed below.

2018	SIGRAPH ASIA
2016	Journal of Fluid Mechanics
2015	Journal of Nonlinear Science
2015	Journal of Computational Physics

Developed Software

2022	*gLearn*: A high-performance python package for machine learning using Gaussian process. `ameli.github.io/glearn`
2021	*Imate*: A high-performance python package for implicit matrix trace estimation. `ameli.github.io/imate`
2017	*Trace*: An online gateway for trajectory analysis of Lagrangian coherent structures of oceanic surface currents. `transport.me.berkeley.edu/trace`
2016	*RestoreIO*: An online gateway and python package for restoring incomplete oceanographic dataset. `transport.me.berkeley.edu/restore`