

ZHANPEI FANG

- education** Ph.D. Geography, Oregon State University. 2022–
Advised by Prof Jamon Van Den Hoek in the Conflict Ecology lab.
- M.S. Applied and Engineering Physics, Stanford University. 2019–2020
- B.S. Physics, B.A. Art Practice, Stanford University. 2015–2019
Concentration in astrophysics.
- industry** Junior Machine Learning Scientist, Orbital Sidekick, San Francisco, CA. 1–9/2022
Conducted research for problems in hyperspectral remote sensing, particularly algorithm development for hyperspectral target detection, and exploring the potential for satellite mapping of methane plumes with future spaceborne imaging spectrometers.
- Applied Science Intern, Descartes Labs, Santa Fe, NM. 6–8/2019
Built supervised random-forest-regression model trained on Sentinel-2 multispectral satellite imagery, derived vegetation indices, & digital elevation model to predict changes in percent tree canopy cover at 20m resolution across the continental US.
- research** Kavli Institute for Particle Astrophysics & Cosmology, Stanford, CA. 4/2018–3/2020
As a student researcher, worked in Prof Risa Wechsler's GFC group to test predictions of abundance and clustering properties of dark matter halos given by the UniverseMachine simulation. Worked with Prof Daniel Holz to infer host galaxy properties of merging compact binaries detectable by LIGO; manuscript accepted by *ApJ* [1].
- Caltech LIGO Laboratory, Pasadena, CA. 6–8/2017
As an undergraduate SURF Fellow working with Dr Rory Smith, quantified computational costs of a gravitational-wave search algorithm that replaces matched filtering with Bayesian hypothesis testing.
- Carnegie Institution Department of Global Ecology, Stanford, CA. 7/2016–6/2017
Working with Profs Chris Field & Katharine Mach, analyzed passive-microwave satellite imagery to quantify effects of changing sea ice cover upon the vulnerability of an Alaskan indigenous village. Presented at Stanford's Symposia of Undergraduate Research and Public Service (SURPS) & published as first author in *Arctic Science* [2].
- teaching** Mentor, CEOAS GUIDE, Corvallis, OR. 1/2023–
Mentorship of undergraduate students in OSU's College of Earth, Ocean, and Atmospheric Sciences.
- Physics and Calculus Tutor, University Tutoring, Seattle, WA. 8–12/2021
Privately tutored high-school students in primarily calculus, physics and chemistry, both remotely & in-person. Created study plans for & tutored students preparing for the SAT/ACT exams.
- Teaching Assistant, Summer Science Program, online. 6–7/2020, 6–7/2021
Taught celestial mechanics, astronomy, & calculus to 36 high-school students in a 5.5-week intensive astrophysics research program (typically residential, converted to Zoom for 2020 & 2021). Graded problem sets, helped write & debug Python code for asteroid orbit determination, and acted as a mentor while ensuring student well-being. Continue to provide service to the program through mentorship of younger alumni and serving on the admissions committee.
- arts/admin** Student, Georgetown Atelier, Seattle, WA. 9/2020–6/2021
- Studio Monitor, Gage Academy of Art, Seattle, WA. 11/2020–6/2021
- Gallery Attendant, Stanford Art Gallery, Stanford, CA. 9/2019–3/2020

honors	Oregon State University Provost's Distinguished Graduate Fellowship	2022–23
	Gage Academy of Art BIPOC Scholarship	2020
	Barbara & Sandy Dornbusch Award in Painting	2019
	Caltech LIGO Summer Undergraduate Research Fellowship (SURF)	2017
	Stanford Earth Summer Undergraduate Research (SESUR) Program Grant	2016
	Edmund Maxwell Foundation Scholarship	2015–19
	Northshore Council PTSA Scholarship	2015
	National Merit Scholarship	2015
selected exhibitions	<i>Reversals: the 6th Annual Undergrad Juried Exhibition</i> , Stanford Art Gallery, CA.	2019
	<i>Somatic Fix</i> , Coulter Art Gallery, Stanford, CA.	2019
	<i>Open Studios</i> , Department of Art & Art History, Stanford, CA.	2016, 18, 19
	<i>Winter Arts Party</i> , Student Organizing Committee for the Arts, Stanford, CA.	2017
	<i>Caught</i> , Asian American Theater Project, Stanford, CA.	2017
	<i>Night at the Museum</i> , Iris & B. Gerald Cantor Center for Visual Arts, Stanford, CA.	2016
	<i>City of Kenmore Juried Arts Show</i> , Kenmore, WA.	2014
skills	<u>coding</u> : Python, C++, Java, MATLAB, R, Mathematica, Unix command line, L ^A T _E X, Git.	
	<u>data analytics</u> : Python for data science (<code>numpy</code> , <code>scipy</code> , <code>pandas</code> , <code>skimage</code> , <code>sklearn</code> , <code>pytorch</code>) with particular expertise in astrophysical (<code>astropy</code> , IRAF, ds9) and geospatial (<code>gdal</code> , <code>geopandas</code> , <code>rasterio</code> , QGIS) tools; data visualization (<code>matplotlib</code> , <code>seaborn</code> , <code>jupyter</code>).	
	<u>human languages</u> : English (native), Mandarin Chinese (~HSK5), French (~CEFR C1).	
published papers	[1] S. Adhikari, M. Fishbach, D.E. Holz, R.H. Wechsler, and Z. Fang, "The binary-host connection: Astrophysics of gravitational wave binaries from their host galaxy properties," <i>The Astrophysical Journal</i> , 2020, in press. arXiv: 2001.01025 [astro-ph.GA]	
	[2] Z. Fang, P.T. Freeman, C.B. Field, and K.J. Mach, "Reduced sea ice protection period increases storm exposure in Kivalina, Alaska," <i>Arctic Science</i> , vol. 4, no. 4, pp. 525–537, 2018, doi: 10.1139/as-2017-0024 .	
popular press	Z. Fang, "Trees here, trees elsewhere," <i>Lausan</i> , 15 December 2021, lausan.hk/2021/trees-here-trees-elsewhere/ .	