

## EDUCATION

<b>Stanford University</b> <i>MS in Statistics</i>	Stanford, CA <i>June 2022</i>
<b>Stanford University</b> <i>BS in Mathematical and Computational Science</i>	Stanford, CA <i>June 2021</i>

## EXPERIENCE

<b>Technical Program Manager, Data Engineering</b> <i>Stanford University School of Medicine</i>	July 2022 – Present <i>Stanford, CA</i>
<ul style="list-style-type: none"><li>Developed a containerized, distributed, cloud-native data pipeline to process <b>hundreds of millions of hectares of high-resolution satellite imagery daily using deep-learning-based computer vision algorithms</b> (Docker, Kubernetes, Redis, RabbitMQ, Google Cloud Platform, AWS).</li><li>Developed novel computer vision algorithms for image classification, image segmentation, and object detection.</li><li><b>Applied mathematical and statistical theories, techniques, and methods</b>, to perform statistical inference on massive data sets produced using the pipeline.</li><li>System is being used by the Brazilian Federal Labor Prosecution Office to target inspections to identify and prevent <b>modern slavery</b> and <b>illegal deforestation in the Amazon rainforest</b>.</li><li>Article about my work <a href="#">here</a>.</li></ul>	
<b>Graduate Research Assistant</b> <i>Stanford Human Trafficking Data Lab</i>	June 2021 – June 2022 <i>Stanford, CA</i>
<ul style="list-style-type: none"><li><b>Designed, trained, and deployed</b> computer vision algorithms to identify remote commodity production sites using satellite imagery (PyTorch, GDAL).</li><li>Papers forthcoming.</li></ul>	
<b>Research Assistant</b> <i>Stanford Center for Ocean Solutions</i>	June 2020 – June 2021 <i>Stanford, CA</i>
<ul style="list-style-type: none"><li>Created a deep-learning-based computer vision algorithm to identify small fishing vessels in satellite imagery (PyTorch, GDAL, OpenCV).</li><li>Analyzed entire near-shore region of the Peruvian EEZ and identified previously unknown locations where <b>illegal, unreported, or unregulated fishing</b> was occurring (Google Cloud Platform, Statsmodels, R).</li><li>Code available <a href="#">here</a>.</li><li>Article about my work <a href="#">here</a>.</li><li>Paper accepted for publication (forthcoming).</li></ul>	

## PROJECTS

<b>Light-Pipe</b>   <i>Python, C++</i>
<ul style="list-style-type: none"><li>Extensible, light-weight, open-source Python framework for <b>data pipelines that scale</b>.</li><li>Provides a set of intuitive abstractions designed to decouple pipeline implementation from the operations they perform.</li><li>Scales effortlessly, being built from the ground-up to support concurrency in all its forms.</li><li>Super fast and efficient, <b>used to perform critical geospatial data processing tasks at least an order of magnitude faster than existing systems</b>.</li><li>Talk I presented about Light-Pipe at <b>Google's Geo for Good Summit in Mountain View</b> available <a href="#">here</a>.</li><li>Code available <a href="#">here</a>.</li></ul>
<b>"Weak Supervision with Incremental Source Accuracy Estimation"</b>
<ul style="list-style-type: none"><li><b>Developed an algorithm</b> to estimate the dependency structure and accuracy of weak supervision sources incrementally using precision matrices and robust principal components analysis.</li><li>Allows for model training with weakly-supervised training data in on-line settings.</li><li>Preprint available <a href="#">here</a>.</li><li>Code available <a href="#">here</a>.</li></ul>

## SKILLS

<b>Languages:</b> Python, C++, SQL, R, BASH
<b>Tools:</b> Git, Docker, Kubernetes, Apache Beam, Apache Spark, PostgreSQL, PostGIS, Rabbit MQ, Redis, Google Cloud Platform, Amazon Web Services (AWS), RESTful APIs, QGIS
<b>Libraries:</b> GDAL, Rasterio, PyTorch, Tensorflow, Scikit-Learn, OpenCV, Statsmodels, NumPy, Pandas, Flask, Celery, PyTest

## AWARDS

<b>National Merit Scholar</b>	April 2017
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