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Physics Simulation Engineer

FULL-TIME SAN FRANCISCO, CA

About Stand:

Stand is an insurance startup revolutionizing how society assesses, mitigates, and adapts to climate risks. Our leadership team has extensive experience in insurance and climate science: building billions in market value at prior ventures in insurtech, wildfire, and real estate. We're expanding our technical team to develop groundbreaking technologies for quantifying climate risks at the property and community levels, and we're hiring an exceptional Physics simulation Engineer to be a key part of this effort.

> **How to apply:** *Interested applicants can email Matt (matt@getstand.com) sharing their resume and a short blurb about their interest in the position.*

Background:

Homes respond differently to climate catastrophes like wildfire — but until now, we've lacked the tools to measure that risk at the individual level. At Stand, we combine deterministic physics models with cutting-edge AI to deeply understand a home's unique risk environment. This enables broader insurance access, incentivizes proactive mitigation, and helps communities become more resilient.

The Role:

As a Physics Simulation Engineer on the Applied Science team, you'll play a key role in developing and deploying advanced computational physics models, collaborating closely with

automated tools that operate orders of magnitude faster. You'll also help us train machine learning models to understand the underlying laws of deterministic physics—transforming legacy workflows into modern, accessible systems.

This role offers a front-row seat to shaping how high-fidelity simulation and AI intersect to characterize the physical world.

Your responsibilities will include:

- Owning our core CFD/thermofluid solvers and their supporting scripts and infrastructure
- Translating real-world physics into simulation code (e.g., combustion, wind dynamics)
- Tuning and validating models and methods against empirical data and experiments
- Running simulations and communicating results to cross-functional teams
- Accelerating traditional numerical solvers and simulation runtimes
- Supporting the development of AI-driven physics models alongside researchers and engineers

What we are looking for:

- 5+ years of experience with **CFD** including simulation design, execution, and validation
- Proficiency with **Fortran-based solvers**, and scripting in **C++, Python**, or similar
- Strong intuition in **thermofluids and heat transfer**, including combustion modeling and radiation
- Proven ability to communicate and integrate technical knowledge across teams
- Experience **calibrating and validating simulations** against physical test results
- Experience with **parallel programming (OpenMP, MPI)**, **HPC workflows**, and **GPU acceleration**
- Expertise in **meshing, discretization, and pre-processing** to align resolution with task complexity
- Cross-functionality: self-directed, adaptable, and comfortable in fast-paced, ambiguous environments