Evan Anders

KITP, Kohn Hall, UCSB | 509-481-1122 | evanhanders@ucsb.edu
/ / / : evanhanders | evanhanders.bitbucket.io | evanhanders.blog | scholar:pOxWQ5sAAAAJ

INTERESTS

Former computational fluid dynamicist switching to a career in AI, **with particular interest in LLMs, NLP, and AI safety**. I believe AI will transform the way we work and live very soon, and I want to be part of a team making sure that transition goes well.

SKILLS

LANGUAGES
Python • C++
Matlab • Mathematica

TOOLS AND FRAMEWORKS
NumPy • SciPy • PyTorch
Pandas • Jupyter
Git • Unix • Vim
Microsoft Visual Studio Code

INTERPERSONAL
Communication • Leadership
Technical Writing & Presentation
Project Management • Mentorship

MISC
Data Visualization
High-Performance Computing

EDUCATION

UNIV. COLORADO
PhD, Astrophysical & Planetary Sciences
2020 | Boulder, CO

UNIV. COLORADO
MSc, Astrophysical & Planetary Sciences
2017 | Boulder, CO

WHITWORTH UNIV.
BS, Physics
2014 | Spokane, WA

RESEARCH EXPERIENCE

2024	**APART LAB FELLOW** Apart Lab | Remote
2023-	**POSTDOCTORAL SCHOLAR** Kavli Inst. for Theor. Physics (KITP) | Santa Barbara, CA
2020-2023	**POSTDOCTORAL FELLOW** CIERA, Northwestern University | Evanston, IL
2020	**POSTDOCTORAL RESEARCHER** Lab. Atmospheric and Space Physics (LASP) | Boulder, CO
2018-2020	**NASA NESSF GRADUATE FELLOW** University of Colorado (CU) & LASP | Boulder, CO
2015-2018	**GEORGE ELLERY HALE GRADUATE FELLOW** National Solar Observatory (NSO) & LASP | Boulder, CO
2015	**GRADUATE RESEARCH ASSISTANT** LASP | Boulder, CO
2013	**NSF SUMMER UNDERGRADUATE RESEARCH FELLOW** LIGO | Hanford, WA
2012	**DOE SUMMER UNDERGRADUATE LABORATORY INTERN** Pacific Northwest National Lab (PNNL) | Richland, WA

SELECT RESEARCH PROJECTS

INTERPRETABILITY OF 2-DIGIT SUBTRACTION | KITP • GIT REPO
- Trained and analyzed 1-layer GPT-style transformer to perform 2-digit subtraction using Jupyter & PyTorch.
- Discovered the functional form of the algorithms performed by the transformer.
- Documented findings in personal blog (e.g., this post).

GRAVITY WAVES IN MASSIVE STARS | CIERA • GIT REPO
- Developed & deployed Python framework to compute state-of-the-art 100 Eflop model of waves in massive stars on NASA supercomputer.
- Linked pen-and-paper theory, 3D simulations, and 1D stellar models to predict if telescope observations can see waves on stars.
- Published in prestigious journal (*Nature Astronomy*) and publicized paper to general audience through interviews with journalists.

TOY MODELS OF CONVECTIVE PENETRATION | CIERA • GIT REPO
- Computed & analyzed ensemble of large 2- and 3D hydrodynamical simulations on NASA supercomputers.
- Developed theoretical model to describe boundary between turbulent and stable regions in stars.
- Led follow-up collaborations to broaden model and incorporate it in state-of-the-art 1D stellar evolution codes.

RESEARCH OUTPUT SUMMARY | KITP, CIERA, CU
- Author of 30 peer-reviewed journal articles (first author of 9; mentor on 5). First author publications used Dedalus, NumPy, & SciPy frameworks.
- Peer reviewed 10 journal articles since 2020.
- Presented 38 talks/posters (invited and contributed).
- Led graduate students on two projects from idea to publication.