

Newton Huy Nguyen

California Institute of Technology, Division of Geological & Planetary Sciences
(408) 613-4379 newton@caltech.edu

EDUCATION

- Ph.D. (Expected Jan '23), California Institute of Technology** | Environmental Engineering Science 2018-
Thesis: Algorithms and Techniques to Optimize Sensing of Greenhouse Gases
- M.S., California Institute of Technology** | Environmental Engineering Science 2017-2018
Thesis: Quantifying Global Methane Emissions with Bayesian Models
- B.A., University of California at Berkeley** | Geophysics, Highest Honors 2012-2016
Thesis: Neural Networks to Model Fluid Flows

WORK EXPERIENCE

- Ph.D. Candidate**, Caltech 2017-
- Advanced global greenhouse gas emission tracing using high performance computing, radiative atmospheric and laser physics, and Bayesian inversion modeling techniques.
 - Improved global climate model accuracy by advancement of cloud physics parameterization models.
 - Authored 6 peer-reviewed publications (3 in review), 4 conference presentations, and 5 invited lectures.
 - Assistant instructor for remote sensing algorithms course for 3 semesters.
 - Awarded National Science Foundation Research Fellowship and Caltech Prize for Mentorship and Service
- Co-founder**, Systemic Access Mentorship Program 2020 -
- Co-founded national mentorship program for blind STEM students (40+ students globally).
- Research Assistant**, Lawrence Berkeley National Laboratory June 2016 - July 2017
- Developed climate model assessment tool for NASA CiARReO satellite mission using parallelized numerical radiation physics transfer model with supercomputing capabilities.

TECHNICAL PROJECTS

- SpectralFits.jl**, Julia & Python 2020-
- Flexible Bayesian inversion interface for retrieval of greenhouse gas concentrations and vertical profiles.
 - Implemented GPU and parallelization acceleration.
- OHMethane**, Julia & MATLAB 2018-
- Bayesian optimization model for global methane emissions.
 - Implemented parallelized statistical computing via Monte Carlo simulations.
- RTM Parallel**, Fortran & MPI 2016-2017
- Parallel radiation model that implements principal component analysis for climate model simulations.

SKILLS

Python | Julia | Julia CUDA | Matlab | Fortran | Git | Bash | Numpy/Scipy | SKLearn/Pytorch | Public speaking | Numerical computing | Bayesian statistics | Climate modeling | High-performance computing | Remote sensing | Satellite spectroscopy | Machine learning | Modular software design | Technical writing and presentation

SELECTED PRESS

- [Runners' World Magazine](#): How Running Has Helped Newton Nguyen Navigate Life as a Blind Man Oct 2021
- [Tokyo Olympics Commercial](#): We're All Better Off With An Ally Jul 2021
- [Mini-Documentary](#): Marathoning Through Life with Vision Loss Oct 2021