

# Tuguldur Sukhbold (Ph.D.)

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Columbus, OH

(permanent resident of the U.S.)

I am a scientist with a background in theoretical astrophysics, proficient in computational modeling, and deeply passionate about machine learning, data visualization, image processing, and blockchain technology. Looking for opportunities to employ my quantitative skills to tackle tough problems in an industrial setting.

## Experience

**Fellow** (Erdős Institute Cōde Bootcamp) 2021

- [Maizefinder](#) - lead a team of 4 to develop tools for predicting locations of maize fields in east Africa
- image labeling and contrast enhancing pipelines were developed for low resolution satellite images
- finetuned various pre-trained CNN models and achieved mean absolute error of  $\sim 230\text{m}$  for over 3000 fields
- group project ranked #2 out of 55 teams in the bootcamp ([final presentation](#))

**Freelance Work** (Nationwide Children's Hospital) 2021

- developed venous intravascular ultrasound image processing pipeline – [vivus](#)
- utilizes combination of convolutional neural network and deterministic models for geometric analysis
- deployed at Dr. Breuer's lab at Nationwide Children's Hospital, publication in medical journal in prep.
- eliminates ambiguity of hand measurements (94% precision)

**Research Scientist** (Ohio State University) 2016 – 2021

- 28 peer-reviewed publications in astrophysics, 1600+ total citations, 30 invited seminars and colloquia
- [Sukhbold et al. \(2016\)](#) was among the top 50 (out of 20,000+) most cited astronomy papers in 2016
- extensive referee service to top journals and government agencies (NASA, National Science Foundation)
- lead small international collaboration, mentored 4 Ph.D. level students, organized 4 seminars

## Awards and Scholarships

**NASA Hubble Fellowship** (Worldwide) 2018

*prestigious fellowship in astrophysics ( $\sim 20$  out of 350+), provides \$300k in salary and research funding*

**Center for Cosmology and AstroParticle Physics Fellowship** (U.S. wide) 2016

*competitive fellowship in astrophysics ( $\sim 2$  out of 200+), provides \$200k in salary and research funding*

**Teaching Award** (Department wide) 2014

*annual award given to the best teaching assistant of each department at UC Santa Cruz*

**Arizona Astronomy Board Scholarship** (Department wide) 2009

*annual research funding award given to the best summer project at U. of Arizona*

## Public Outreach and Volunteer Work

**Friends of Ohio State Astronomy and Astrophysics**, Ohio State University. 2016 – 2018

*series of astrophysics research presentations to public*

**Telescope for each high school in Mongolia**, Office of Astronomy Development, IAU. 2015

*won \$6000 grant from the IAU and brought 45 educational telescopes to rural schools in Mongolia*

**Inmate Education Project**, UC Santa Cruz. 2014

*taught math classes to Santa Cruz County Jail inmates for one quarter*

## Education

**University of California Santa Cruz**, *Ph.D.* in Astronomy and Astrophysics 2013 – 2016

**University of California Santa Cruz**, *M.Sc.* in Astronomy and Astrophysics 2011 – 2013

**University of Arizona**, *B.Sc.* in Astronomy 2007 – 2011

Languages: English, Mongolian, and Russian