Edward Greg Huang

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Nationality: American

Current position

Undergraduate Student, Department of Mathematics, University of California, Berkeley

Areas of Interest

Algorithmic information theory • Deep learning • Biophysics

Education

2019 B.A. in Applied Mathematics, University of California, Berkeley
2016 Study abroad, University of Hong Kong

Academic Positions

2018 - present Student Advisor to the Regents, *University of California*
2018 - present Artificial intelligence researcher, *Intelligent Robotics Group, NASA Ames*
2018 REU research fellow, *Santa Fe Institute*
2017 - present Biophysics researcher, *Lawrence Berkeley National Laboratory*
2015 - present Evolutionary ecology researcher, *Department of Environmental Science, UC Berkeley*

Industry & Nonprofit Experience

2018 - present Senior Unit-Level Manager, *Berkeley Student Cooperative*
2017 - present Brand Ambassador, *Klättermusen AB*
2017 - 2018 Vice President, *Cal Hiking and Outdoor Society*
2016 Financial Analyst Intern, *EQS Group AG*
2015 - 2016 Architectural Intern, *Project M+*

Publications

Journal articles

2018 **Huang EG** (2019) Algorithmic information and inference devices. *Manuscript in preparation.*

2018 **Huang EG**, Lin Y, Ebert M, Ham DW, Zhang CY, & Sachs RK. (2019) Synergy theory for murine Harderian gland tumours after irradiation by mixtures of high-energy ionized atomic nuclei. Accepted for publication at *Radiation and Environmental Biophysics*.

2018 Krehenwinkel H, Fong M, Kennedy S, **Huang EG**, Suzuki N, Cayetano L, & Gillespie RG. (2018) The effect of DNA degradation bias in passive sampling devices on metabarcoding studies of arthropod communities and their associated microbiota. *PLOS ONE 13(1): e0189188*. https://doi.org/10.1371/journal.pone.0189188

Invited Talks & Presentations

* indicates presenter

2019 **Huang EG***, Ham DW, Lin Y, Wang S, Zhao L, Zhang Y, Blakely EA, Chang PY & Sachs RK. (2019) Synergy theory: murine Harderian gland tumors and *in vitro* chromosome aberrations induced by exposure to mixed beams with some high-LET components. Talk given at: *2019 NASA Human Research Program Investigators' Workshop*; Jan 22 - 25; Galveston, Texas, USA.

2018 **Huang EG***, Wolpert DH. (2018) Connections between Turing machines and a formalization of knowledge. Talk given at: *Santa Fe Institute REU Final Talks*; Aug 9; Santa Fe, New Mexico, USA. Video

2017 Ham DW, Gao J, Song BL, Yu J, Zhao LY, **Huang EG***, Lin Y, & Sachs RK. (2017) Synergy theory in biology: Simulating radiation damage during interplanetary voyages as an example. Poster session presented at: *11th Annual Biology and Mathematics in the Bay Area Conference; Nov 18*; San Francisco, California, USA. Poster

Book Chapters

2015 Adhikari A, Ghosh DJ, **Huang EG**, et al. (2015) Theory Meets Data: A Data Scientist's Handbook to Statistics. *UC Berkeley Dept. of Statistics*. Manuscript

Authored software

2017 **Huang EG**, Rominger AJ. (2017) `kokua`: An `R`-package of tools and data for Hawaiian ecology. *GitHub*

2016 Rominger AJ, **Huang EG**. (2017) `hdimDB`: Tools for biocollections database management in `R`. *GitHub*

Selected Programming Projects

2018 `deepFlood`: Deep learning framework to track floods using satellite imagery over TensorFlow.
2018 `abyss`: Rogue-like platform video game in Java.
2018 `BearMaps`: Web mapping service for the city of Berkeley in Java.
2018 `deque`: data structure implementation in Java.
2017 `simpleNeuralNet`: General feedforward neural network API in Python.
2017 `multiAgentSearch`: implementation of search algorithms in Python.
2017 `hdimGeo`: interactive map of biocollections data from the NSF Hawaii Dimensions project in `R`.
2017 `kokua`: Open-source `R`-package of tools and data for Hawaiian ecology.
2017 `hdimShiny`: Web application for ecological data wrangling.
2016 `hdimDB`: Open-source package of tools for biocollections database management in `R`.
2016 `yelpMaps`: interactive map of Yelp data in Bay Area in Python.
2016 `schemeInterpreter`: Direct executor for Scheme programs in Python.

Grants, honors & awards

2018 REU Research Fellowship, National Science Foundation Grant No. 1757923 - $7,000
2017 Dean's List, UC Berkeley
2016 ASUC Student Opportunity Fund Grant, UC Berkeley - $1,000
2016 ASUC Academic Opportunity Fund Grant, UC Berkeley - $250