Kyle Luther

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Education

B.A. PHYSICS | 05/2016 | UC BERKELEY
PH.D. PHYSICS | IN PROGRESS (05/2022) | PRINCETON

Teaching

TEACHING ASSISTANT | NEURAL NETWORKS (COS 485) AT PRINCETON
Spring 2018, Spring 2019

Research

RESEARCH ASSISTANT | SEUNG GROUP (PRINCETON) | 2017-PRESENT
Implemented algorithms to segment neurons with convolutional networks in 3D images
Analyzed and proposed novel initialization schemes in deep neural networks
Implemented and proposed cortex-inspired unsupervised learning algorithms

UNDERGRAD RESEARCHER | PERLMUTTER GROUP (UC BERKELEY) | 2014-2016
Used machine learning (random forest classifiers) to find supernovae in satellite images

UNDERGRAD RESEARCHER | FORTNEY GROUP (UC SANTA CRUZ) | SUMMER 2014
Optimized code used to calculate propagation of light through exoplanetary atmospheres

Publications

Sensitivity of sparse codes to image distortions
K Luther, HS Seung - Accepted and soon to appear in Neural Computation (2022)
Reexamining the principle of mean-variance preservation for neural network initialization
K Luther, HS Seung - Physical Review Research (2020)
Unsupervised learning by a softened correlation game: duality and convergence
K Luther, R Yang, HS Seung - 53rd Asilomar Conference on Signals, Systems, and Computers (2019)
Learning metric graphs for neuron segmentation in electron microscopy images
K Luther, HS Seung - 16th IEEE ISBI Conference (2019)
Learning and segmenting dense voxel embeddings for 3D neuron reconstruction
Kisuk Lee, Ran Lu, **K Luther**, HS Seung - IEEE Transactions on Medical Imaging (2021)
The discovery of a gravitationally lensed supernova Ia at redshift 2.22
D Rubin, B Hayden, …., **K Luther,** et al. - The Astrophysical Journal (2018)
Characterizing transiting exoplanet atmospheres with JWST
TP Green, MR Line, C Montero, JJ Fortney, J Lustig-Yaeger, **K Luther -** The Astrophysical Journal (2016)