Justin Paul SKYCAK

EXPERIENCE

Current AUG 2016	**Cognitive Neuroimaging Research Assistant @ ROSE LAB (Cognitive Neuroscience Lab at University of Notre Dame)** › Using machine learning methods (e.g. multi-voxel pattern analysis) to analyze neuroimaging data in cognitive neuroscience experiments.
Current JAN 2016	**Data Science Intern @ AUNALYTICS (Data Science Consulting/Software Startup)** › Analyzed multimillion-row banking, clickstream, and geolocation datasets, all of which spanned multiple levels of scale/granularity. › Blueprinted and prototyped a searchable online image gallery to connect our data visualizations to the code that was used to generate them. › Created data exploration/hypothesis generation webapps with R's Shiny package.
Current MAR 2013	**Mathematics Instructor @ MATHNASIUM OF GRANGER (Math Tutoring Franchise)** Taught math to students of all grades and occasionally ran the center.
AUG 2015 MAY 2015	**Machine Learning Research Intern @ NEW MEXICO CONSORTIUM (Engineering Lab in Los Alamos, NM)** › Attempted to generate synchronous spike-rate oscillations using the PetaVision library for brain-based deep convolutional neural network supercomputing. › Successfully implemented spiking neurons but unable to demonstrate spike-rate oscillations › Notre Dame Summer Research Grant: apx \$3,000
JULY 2013 MAY 2013	**Physics Research Intern @ QUARKNET (Particle Detection Lab at University of Notre Dame)** › Tested and analyzed efficacy of light generation/transmission materials › Results sent to decision-makers of material upgrades in the CMS particle detector at CERN. › Presented project at regional (NIRSEF) and state (HSEF) science fairs under name "Optimizing Scintillation and Light Transmission for Use in a High-Energy Particle Detector" › IAS Junior Research grant: \$300
MAY 2013 SEPT 2012	**Volunteer Physics Researcher @ LEVINE LAB (Particle Detection Lab at Indiana University South Bend)** › Designed and created a material to improve acoustic sensors in the COUPP dark matter detector › Presented project at regional (NIRSEF), state (HSEF, INJSHS, IAS Talent Search), and international (ISEF) science fairs under name "Making a Matching Layer for Acoustic Sensors in a COUPP Dark Matter Detector" › IAS Junior Research Grant: apx \$50
2013 2011	**Camp Counselor @ CHILDREN'S DISPENSARY (Special-needs Nonprofit in South Bend, IN)** ›Taught, supervised, and assisted special-needs children. ›Created promotional media CDs.

EDUCATION

Current Aug 2014	**B.S. in Honors Mathematics @ University of Notre Dame** › Eli Lilly Scholarship Recipient (4 yrs full tuition) and Glynn Honors Scholar › Took applied math grad-level courses in computational neuroscience and game theory as a sophomore › Presented comp neuro project "Network Motif-Inspired Evolution of Hodgkin-Huxley Neuronal Networks with Spike-Timing Dependent Plasticity" at ND COS-JAM 2015. Found rules describing the final states of STDP neural networks in terms of cycle lengths and stimulus locations/frequencies, provided that the cycles are sufficiently small. › Published math project "Numerical Investigation of the 3n+1 Problem and its Continuous Extension" in Scientia, ND's journal of undergrad research, & served 2 yrs as math section editor
May 2014 Aug 2010	**Valedictorian @ Marian High School (Mishawaka, IN)** › National Merit Finalist › National AP Scholar › 2x Chem Olympiad regional finalist

COMPUTER LANGUAGES/SOFTWARE

Professional Working Proficiency:	R, Python, Matlab
Basic:	C, Javascript, html, CSS, php, Tableau, Git