

# Leon Yin

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yinleon.github.io

## EDUCATION

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NEW YORK UNIVERSITY

Bachelors of Science in Chemistry, May 2015

Minor in Computer Science

## COMPUTER SKILLS years experience

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Languages: Python<sup>5</sup>, Fortran, HTML5, JavaScript, MySQL

Programs: Matlab<sup>2</sup>, Photoshop<sup>6</sup>, Final Cut Pro, Wordpress

OS: Mac OS X, Linux/Unix

## CURRENT PROJECTS

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Federal Fund Finder

Used Python to scrape (using lxml) and ingest (using Pandas and SQLAlchemy) 15 years (200k records) of NSF awards into 4 SQLite tables. Created on-the-fly investigator, institution, discipline, and topic reports. Built interactive data visualization using Plot.ly and user interface using Flask and Heroku (Side project).

GLOBAL SEAWATER OXYGEN-18 DATABASE

Built data portal to filter, interact with and visualize NASA GISS Global Seawater Oxygen-18 Database using Flask, SQLite, and Pandas. Updated Global Gridded Dataset in Fortran (Contract position since Nov 2015).

## RESEARCH EXPERIENCE

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*October 2015 – January 2016*

LAMONT DOHERTY EARTH OBSERVATORY

*PI: Hugh Ducklow, Columbia University and Palmer LTER*

Analyzed 15-year inorganic nutrient and CTD (seawater physics) datasets from the western Antarctica Peninsula (wAP) to calculate Net Community Production (NCP). Preprocessed cruise data with grid-to-coordinate converter to standardize shipboard coordinates using relational database. Estimated Mixed layer depth (MLD) using gradient and threshold method for 1200 up- and down-casts of salinity and potential density. Optimal MLD identified using cluster analysis and used to calculate deficiency (as a result of Phytoplankton biomass) of  $\text{NO}_2 + \text{NO}_3$  integrated to the MLD. Ratio of  $\text{NO}_2 + \text{NO}_3$  integral to  $\text{SiO}_4$  and  $\text{PO}_4$  integrals compared to affirm Redfield Ratio (Stoichiometric Ratio of Marine Biomass). NCP estimated using C:N Redfield Ratio. Next steps: incorporate Sea ice thermodynamics and water column structure to improve MLD estimates. See [iPython Notebook](#) for more.

*June 2015 – August 2015*

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

*PI: Allegra N. LeGrande, NASA GISS and Center for Climate Systems Research*

Improved skill of calculating Global Gridded Oxygen-18 Dataset in poorly sampled Arctic Ocean. Built backend to ingest, search and visualize 60 years of global seawater measurements (30K records) using Python. Extended legacy Fortran software to aggregate Arctic Ocean into regional water masses for linear regressions using Pandas, SciPy and NumPy. Automated quality checks using jackknife slope analysis, static data visualization using Matplotlib and Seaborn, [interactive data visualization](#) using D3.js plugin for Matplotlib. See [iPython Notebook](#) for more.

*September 2014 – June 2015*

CENTER FOR ATMOSPHERE AND OCEAN SCIENCES

*PI: K. Shafer Smith, Courant Institute of Mathematics*

Studied the Ocean Carbon cycle based on the bust and bloom of Phytoplankton using a Michaelis-Menten predator prey model for Nutrients, Phytoplankton and Zooplankton using Matlab.

*April 2014 – December 2014*

DEAN'S UNDERGRADUATE RESEARCH FUND

*PI: Leon Yin, Brynn O'donnell and Mary Killilea, Biology and Environmental Studies*

Project lead on 28-day experiment quantifying the effects of Ocean acidification on oysters through changes in water quality.

## **PROFESSIONAL TRAINING**

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NYU CENTER FOR GENOMICS AND SYSTEMS BIOLOGY, NEW YORK, NY

*Research Technician, March 2015 – June 2015*

Performed qPCR and high-throughput sequencing using Illumina machines.

Ordered lab supplies and built scheduling system for shared machines.

Programmed liquid-handling robot in Javascript.

Statistical analysis of flow cytometry output using R bioinformatics module.

+ POOL, NEW YORK, NY

*Water Quality Technician, April 2014 – September 2014*

Sampled and tested Hudson River bacteria, turbidity, color, temp, salinity, and pH for New York's first self-floating, self-filtering public pool.

NYU OFFICE OF SUSTAINABILITY, NEW YORK, NY

*Sustainable Energy Project Coordinator, May 2012 - September 2014*

Analyzed savings for university-wide LED lighting installations.

Project lead on paper towel composting in academic buildings.

CASA SYSTEMS, BILLERICA, MA

*Fiber Optics Specialist, March- September 2011*

Built and tested high bandwidth modems for commercial use.

## GRANT HISTORY

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|------|--|--------|
| 2014 | NYU Green Grants, "One Man's Trash" ( <a href="#">Video</a> )  | \$4000 |
| 2014 | Dean's Undergraduate Research Fund, "The Effects of Ocean Acidification on the Feeding Rates of Bivalves" (Presentation) | \$1000 |
| 2015 | NASA GISS, "What is Past is Prologue" (Presentation and Poster)  | \$4800 |

## INVITED POSTER AND ORAL PRESENTATIONS

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|------|--|
| 2013 | Association for the Advancement of Sustainability in Higher Education, Nashville TN (Presentation) |
| 2015 | Undergraduate Research Conference, New York NY (Presentation)                                      |
| 2015 | NASA GISS NYCRI Symposium, New York NY (Presentation and Poster)                                   |
| 2015 | NOAA CREST Research Symposium, New York NY (Poster)  |
| 2015 | AGU Fall Meeting, San Francisco CA ( <a href="#">Poster</a> )                                      |

## VOLUNTEER HISTORY

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| Oxfam America at NYU | President 2013, Treasurer 2012 |
| The Creative Cycle   | Contributor since 2014         |
| Datakind             | Member since Oct 2015          |

## LANGUAGES

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Native English speaker with working proficiency in Chinese and German.