

CORA YANAR SCHNECK

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LAST UPDATED: SEPTEMBER 2023

CURRENT AFFILIATION

University Corporation for Atmospheric Research (NCAR/UCAR): Mesa Lab

EDUCATION

-B.A. in Ecology & Evolutionary Biology [May 2018]

Cumulative GPA: 3.773/4.0

Department of Arts and Sciences; **University of Colorado, Boulder**

-B.A. Honors in Computer Science [May 2018]

Cumulative GPA: 3.651/4.0

Department of Arts and Sciences; **University of Colorado, Boulder**

-B.A. Honors Thesis: *Hail Hydra: Named Entity Resolution, Extraction, and Linking of Lexically Similar Names* [Advisor: Dr. Chenhao Tan]

ACADEMIC AWARDS

2018 Computer Science *magna cum laude*

2018 Discovery Learning Award

2013-2018 University of Colorado, Boulder Dean's List

PROFESSIONAL APPOINTMENTS

University Corporation for Atmospheric Research, Boulder, CO

- Software Engineer II: September 2023-Present

- Scientific Python Developer on the GeoCAT team and working on GeoCAT-comp

- Developing and maintaining computational functions for operating with geoscience, atmospheric, and oceanic data

Magnite (Previously known as SpotX), Broomfield, CO

- Software Engineer in Test II: May 2019-January 2023

- Sole dedicated QA engineer for two remote Python and JavaScript scrum team with 4-6 developers

- Weekly releases for multiple internal tools like SuperX (a company specific Tableau alternative for data visualization) with a focus on clear documentation and regression frameworks

- Developed an automated testing suite in WebdriverIO with 300+ tests to improve CI/CD goals

Tripati Lab (Climate & Biogeochemistry Group) at UCLA, Los Angeles, CA

- Machine Learning Researcher: August 2021-2023

-- 2020 Anti-Racism Demand Letters Analysis with Natural Language Processing

Laboratory for Atmospheric and Space Physics (LASP), Boulder, CO

- Undergraduate Research Assistant: May 2015-May 2018

- Advanced and refactored Python deployment code and automated unit testing for scientific data returned from the Mars orbiter MAVEN (NASA)

SCHNECK CURRICULUM VITAE

-Successfully launched the first ELK stack to graphically track thousands of files and file changes returned daily, including developing the Docker environment for deployment

University of Colorado Boulder, College of Arts and Sciences

-WordPress Developer: May 2017-May 2018

-Designed and constructed the Shakespeare CoLab website within a four-month deadline with detailed documentation for non-developers in the English department

University of Colorado Boulder, Student Academic Success Center at CU Boulder

-Computer Science Tutor: January 2015-August 2015

-Taught students one-on-one to master the fundamentals of Python and C++

University of Colorado Boulder, University of Colorado Boulder Libraries

-Student Library Work in Metadata Services (February 2014-August 2015)

-Expanded and preserved over 10,000 university records utilizing Sierra and OCLC

PROJECTS

History Survival Guide

-Researcher, Writer, and Illustrator: July 2019-*Present*

-Creator and curator for a STEM written and illustrated guide that explores scientific concepts with practical information about how to recreate and use the techniques described

-Pages to date include: proper motion of stars, translating 115 “Hobo Signs” from the 1800’s, deciphering the Pioneer Plaque, building electromagnets, curing scurvy, decoding the Tap code, determining latitude, and building an astrolabe for the north and southern hemisphere at any latitude from scratch

Python Package: pydar

-First published in January 2023: pip install pydar

- Joint owner and sole developer of a package to access, download, view, and manipulate Cassini RADAR data from the image flybys on Saturn’s moon Titan

Python Package: centerline-width

-First published in April 2023: pip install centerline-width

- Sole owner and developer of a package using NetworkX and Voronoi diagrams to find the centerline and width of rivers from coordinates of the right and left bank

Python Package: star-chart-spherical-projection

-First published in November 2022: pip install star-chart-spherical-projection

- Sole owner and developer of a Python package to generate an astronomy star chart based on spherical projection that corrects for distortions with stereographic projection

-Star chart includes: 1.) North or South Hemisphere options with a range of declination values centered on either +90 or -90 pole 2.) proper motion based on time since 2000 4.) precession of the equinoxes since 2000

Python Package: muller-eot

-First published in November 2022: pip install muller-eot

- Sole owner and developer of Python package for M. Müller implementation of the '*Equation of Time - Problem in Astronomy*' to calculate EOT and the effect of eccentricity/obliquity

SCHNECK CURRICULUM VITAE

-Package can separate the effect of eccentricity and the effect of obliquity from the Equation of Time and can accept an arbitrary eccentricity, obliquity, and orbital period to calculate and graph the Equation of Time

2020 Anti-Racism Demand Letters Analysis:

-June 2022-January 2023

-Developed a Python script to automate the process to read through .docx, .pdf, .txt demand letters collected from 1968, 2016, and 2020 in a campaign against racism to be used in further machine learning methods

IFE-Dust Source: Python Script

-Lead developer: August 2018-May 2019

-Developed script to correlate which small celestial body created the dust which disturbed the magnetic field and created an Interplanetary Field Enhancement with the NASA API for Near Earth Objects

IFE-Search: Python Script

-Lead developer: August 2018-May 2019

-Automated and standardized searching and extracting hundreds of unidentified interplanetary magnetic field enhancements in multiple satellite magnetometer data via ETL methodology

Hail Hydra: Named Entity Resolution, Extraction, and Linking of Lexically Similar Names

-Honors Thesis: August 2017-April 2018

-Named entity resolution in Python to identify, label, and link complex names, titles, and locations within texts spanning a range of complexity, jargon, and dialect to dynamically identify a multi-part named entity from the text rather than from a preexisting corpus

-Scripted the automatic generation of a labeled network of symbolic and physical interactions between characters in text based on dynamically assigned gender, frequency, and sentiment

Expanded Smith-Waterman Alignment: Python Script

-Lead developer: April 2017-June 2017

-Developed an expanded version of the traditional Smith Waterman algorithm for local alignment in genetic sequences that dynamically changes the mismatch score to allow for a range of confidences to find greater instances of a match

Billy-Bot: Python Script

-Lead developer: April 2017-June 2017

-Dynamic Shakespeare sentiment analysis to track the emotional arcs of Shakespeare's plays

COMPUTER SKILLS AND SYSTEMS EXPERIENCE

Tools and Software

Atlassian (Jira, Crucible, and Confluence), Adobe (Photoshop and Premiere), APIs, Astropy, BeautifulSoup, Bitbucket, CI/CD, Docker, Electron, ETL, Flask, Fusion360, Git, Github, Github Actions, Google Earth Pro, Jenkins, JSON, Jupyter, Linux/Ubuntu, Machine Learning, Matplotlib, Natural Language Processing, NLTK, NetworkX, NumPy, Pandas, Plotly, Postman, PyPi, Pytest, PythonAnywhere, Regex, Scikit-Learn, Scipy, SSH, SyntaxNet, TensorFlow, Tkinter, Unity, WebdriverIO, Web Scrapping

Programming Languages

Proficient: Python, C#, Shell/Bash, SQL, R and R-Studio, LaTeX, Markdown

Exposure: C++/C, JavaScript, MATLAB, HTML, CSS

SCHNECK CURRICULUM VITAE

Selected Coursework:

Algorithms, Algorithms for Molecular Biology, Conservation Biology, Evolutionary Biology, Genetics: Molecular to Population, Introduction to Physical Anthropology 1 and 2, Introduction to Artificial Intelligence, Landscape Ecology, Machine Learning, Operating Systems, Plant Biodiversity and Evolution, Software Dev Methods and Tools

LETTERS OF RECCOMENDATION AVAILABLE UPON REQUEST