Chinh H. Duong, PhD

U.S. Citizen | New Haven, CT | cduong.phd@gmail.com | linkedin.com/in/chinhduong | https://cduong.me

Education

Data Scientist Certification | The Data Incubator | March 2020
Ph.D. in Physical Chemistry | Yale University | December 2019
B.A. in Chemistry | Wesleyan University | May 2013

Technical Skills

INDUSTRY KNOWLEDGE: Scientific Problem-Solving | Experimental Research and Automation | Data Analysis | Design and Development of Scientific Instruments | 2D & 3D Modeling (AutoCAD Inventor, 3D Printing) | Teamwork and Leadership | Grant Writing | Mass Spectrometry | Vibrational Spectroscopy | Laser and Vacuum Technology
PROGRAMMING LANGUAGES: Python | Bash | Git | Working knowledge of Linux, Raspberry Pi, SQL
DATA SCIENCE: Machine Learning (Sklearn) | Data Visualization with Python

Experience

DECOY THERAPEUTICS INC   **October 2022 – Present**
R&D Scientist II

- Development and automation of a new modular research lab with an AI engine focused on designing and synthesizing de novo antiviral biotherapeutics.

INDEPENDENT   **April 2020 – Present**
Analyst and Investor

- Researched and invested in low frequency, high alpha and arbitrage events in emerging biotechnology, software, and engineering companies, with a current focus on blockchain and web3 companies.
- Developed data mining and analytics programs (machine learned time series forecasting) for bitcoin.

VALISURE   **March 2022 – October 2022**
Laboratory Director

- Research and development project lead for mass spectrometry and vibrational spectroscopy of pharmaceuticals and consumer products.
- Organized and triaged resources to execute on contract deliverables (experiments, reports, and certificates).
- Authored and revised client reports, certificates, publications, and standard operating procedures.
- Supervised a team of B.S. and M.S. scientists.

THE DATA INCUBATOR   **January 2020 – March 2020**
Fellow

- 3 month fellowship to train data science skills in visualization, machine learning, natural language processing and parallelization, culminating in the completion of several data projects covered in the data projects section.

YALE UNIVERSITY   **August 2014 – December 2019**
National Science Foundation Graduate Researcher

- Collected and analyzed gigabytes of mass spectrometry, vibrational spectroscopy, and quantum chemistry calculation data to characterize the structure and dynamics of various molecular clusters, resulting in several peer reviewed publications.
- Designed and built a cryogenic ion mass spectrometer that improved ion yields over 40%.
- Developed data acquisition software for experimental apparatus and automated data collection processes.
- Mentored several generations of graduate students and managed their research goals, data analysis, data collection, and manuscript preparation process.

- Lead authored and co-authored 16 manuscripts in peer reviewed journals including publications in Science Magazine and Nature Chemistry. Additionally, presented results at 20+ posters and talks.
- Helped write and evolve the research figure sets of several successful government research grant applications.
- Architected 3D models and facilitated the construction of Yale's Center for Mass Spectrometry and Structural Characterization and ensured that the new facility was within design requirements and construction goals.

WESLEYAN UNIVERSITY   **December 2009 – May 2013**
Research Assistant
- Acquired and analyzed megabytes of rotational spectroscopy data to structurally characterize and assign the spectrum of molecular systems, resulting in a first authorship paper as an undergraduate student.

Media Specialist   **August 2012 – May 2013**
- Led large classroom installation and renovation projects to upgrade technologies in 5+ major buildings on campus.

Training Manager   **August 2010 – May 2012**
- Developed and managed the training program for new Instructional Media Services technicians and taught classes on troubleshooting and the maintenance of campus technology and software.

Teaching Experience

Yale University, Teaching Fellow   **August 2014 – May 2015**
- Led weekly discussion sections, guided undergraduate students with understanding of homework and concepts from general chemistry, and graded homework and exams.

University of Nebraska, Upward Bound Tutor   **October 2013 – May 2014**
- Led weekly afterschool tutoring sections, guided high school students with understanding of homework and concepts from mathematics up to calculus, elementary chemistry, physics, and biology.

Wesleyan University, Teaching Assistant   **September 2012 – May 2013**
- Led homework discussion sections and guided students in General Chemistry I & II with questions concerning basic equilibrium, thermodynamics, kinetics, and inorganic chemistry.

Selected Data Projects

Machine Learning
- Predicted star ratings for Manhattan restaurants using Yelp categorical data and machine learning pipelines (feature creation with one-hot encoder, linear regression, K nearest neighbors, and random forest regressor).
- Classified 10,000 images with TensorFlow 2.0 on CIFAR10 data set using transfer learning from ResNet50.

Analytics and Modeling
- Forecasted blockchain prices with Facebook Prophet. Created a raspberry pi server to continuously mine and analyze live exchange trading data to identify daily, weekly and monthly trends.
- Predicted upcoming temperatures with time series data analysis (linear and Fourier weather modeling).

Honors & Awards

National Science Foundation Graduate Research Fellowship   **2016-2019**
- Competitive annual national award given by the National Science Foundation to 2000 graduate students for their research potential in science, technology, engineering and mathematics disciplines.