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CHRISTOPHER DENQ

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Self-taught, self-funded, and self-directed student of **data science and machine learning**. Unique background in **philosophy and art history** confers better story-telling skills from nebulous data. **Avid self-learner** and **serial project-builder** who strives to constantly grow, empower others, and add value back to the world.

EDUCATION

Foothill College Los Altos Hills, CA
Prospective Student in Mathematics and Computer Science Mar 2022 – Present

- **Spring 2022**: Multivariate Calculus, OOP Programming (Python), Elementary Statistics, Intro Cloud Computing
- **Summer 2022**: Differential Equations, Intermediate Software Design (Python)
- **Fall 2022**: Linear Algebra, Advanced Data Structures and Algorithms (Python)

Interim Self-Learning
Data Analytics and Visualization Bootcamp, University of Pennsylvania (4.0/4.0 GPA) Sep 2021 – Mar 2022
Fundamentals of Machine Learning for Predictive Data Analytics by Kelleher, Textbook Self-Study Nov 2021 – Present
Coding Events/Platforms: Advent of Code 2021, Google Foobar, HackerRank, SQLPad.io May 2021 – Present

University of Pennsylvania Philadelphia, PA
Bachelor of Arts in Philosophy and Art History Aug 2015 – Dec 2017, Jan 2019 – May 2021

- **Honors:** Maguire Foundation Arts & Humanities Scholarship, Mayor's Scholars Program @ Kings Court English College House Scholarship for Community Engagement, John C. Parker Fellowship for Undergraduate Research (Statistics)

Van Nuys Senior High Van Nuys, CA
Highly Gifted Math and Science Magnet Aug 2011 – Jun 2015

- **Honors**: Ranking 3/582, National AP Scholar Award (Highest Distinction), ACT: 35/36

WORK & VOLUNTEERING

California State University: Northridge, College of Engineering and Computer Science Northridge, CA
COMP452 Machine Learning Class Volunteer Nov 2021 – Present

- Researching graduate-level machine learning material, creating 15+ class slide decks, 17+ Python examples to demonstrate ML concepts, assisting in general class material preparation, proofreading, documentation for Professor Wenchin Hsu
- Self-studied *Fundamentals of Machine Learning for Predictive Data Analytics by Kelleher* for machine learning work
- **Succeeding** in applying abstract ML and statistical material to Python code and slide decks for graduate-level course

Freelance/Volunteer Computer Science Tutor: Wyzant.com, Local Various
Python Course Teacher, AP Computer Science Tutor Sep 2021 – Present

- Taught computer science topics to 25+ high school, college, and adult learners for total 65+ hours ranging from coding fundamentals to advanced data structures and algorithms to machine learning topics
- **Succeeded** in adapting teaching style, clearly communicating abstract computer science concepts, mentoring students

Tzu Chi Buddhist Foundation, Tzu Chi Medical Foundation USA San Dimas, CA; Philadelphia, PA; Northridge, CA
National Volunteer, Free Clinic Receptionist, Event Crew, General Service Member 2011 – 2015, 2017 – 2019, 2021 – Present

- Long-time general service member with experience in assisting 6 different departments: Primary Care Physician, Pharmacy, Acupuncture, Dental and Vision, Reception and Records, Equipment Service
- Assisted in 50+ charity fundraisers, disaster reliefs, food/clothes drives, homeless shelter cooking, senior homes visits, orphanage assistances, and free clinic; helped with preparation material, planning, transport, field work, clean-up
- Learned and followed Buddhist teachings of Master Cheng Yen of compassion, wisdom, and patience in all volunteering
- Instilled strong teamwork mentality, adaptive problem solving, and deep desire to help others, particularly through healthcare
- **Succeeded** in aiding people in need for 8 years in 5 cities: San Dimas, Philadelphia, Northridge, Los Angeles, Alhambra

Kings Court English College House, University of Pennsylvania Philadelphia, PA
Chair of Manager Board Aug 2017 – Mar 2020

- Managed team of 11 other managers, leads weekly meetings, liaisons for 3 student staff groups
- Led 14-16 annual house initiatives, 12 study break events for 450+ students, 5 residential programs
- **Succeeded** in 20% increased student engagement (30.7 from 25.6), 12% increased event quality ratings (4.4/5 from 3.9/5), 3 new event traditions, and 2 new in-house management strategies over 4 years

Oasis Commissary (Non-Profit) & Mirage Lounge, University of Pennsylvania — Philadelphia, PA
Founder and Executive Business Operations Manager — Sep 2016 – Mar 2020

- Wrote proposal to turn unused dormitory space into non-profit commissary, obtained vendor license from Philadelphia city
- Managed 21 staff and 2 junior managers, $2000 bi-monthly budget, 6 marketing campaigns, 2 training programs
- Maintained in-house lounge (Mirage Lounge): hosted 5 semesterly arts & crafts/relaxation/enviro-conscious programs
- **Succeeded** in serving local college dorm for 3 years: $1300 gross (returned to Penn), 22k purchases, 180 unique clients

Arthur Ross Gallery — Philadelphia, PA
Fall and Spring Docent — Sep 2019 – Mar 2020

- Learned gallery material, docent etiquette, and general operations of collegiate gallery
- Led 4 tours for Jaume Plensa's Talking Continent exhibition
- Led 6 tours for Helen Frankenthaler's Frankenthaler on Paper exhibition
- **Succeeded** in conveying abstract artistic concepts, engaged over 65+ visitors across 10 tours, and gained 20+ new email subscribers

SELECTED PROJECTS: MACHINE LEARNING (More on GitHub)

Full-Stack Machine Learning Dashboard: Mushroom Edibility Predictor — Mar 2022
Python (SKLearn, Flask, Matplotlib), HTML/CSS/JS — github.com/cdenq/mushroom-edibility-predictor-web-app

- Trained 7 ML models on 60k+ data points to predict its edibility to within 80-99% accuracy, created 8 EDA graphs
- Created 1 front-end webapp (3 pages); presented findings and creation process to 3 Penn faculty/staff and 20+ students

Deep Learning Model: Charity Funding Predictor — Feb 2022
Python (Pandas, SKLearn), Google Colab, TensorFlow, Machine Learning — github.com/cdenq/charity-funding-success-predictor

- Cloud-based computing, machine learning project that preprocesses, trains, and evaluates 41k data points on charity funding
- Creates deep learning neural network with 3-6 layers, 10 neurons; optimized hyperparameter tuning in 500+ epochs
- Found model with over 80% accuracy within 1 iteration, 91% accuracy within 3 iterations; created 1 analysis report

Web Scraper and Dashboard: Data for Planet Mars — Dec 2021
Python (Flask, Beautiful Soup), MongoDB, HTML/CSS/JavaScript — github.com/cdenq/mars-data-scraper-and-dashboard

- Web scraped 4 types of Mars Data: news articles, featured images, Mars facts, and hemisphere sub-images
- Uploaded and stored all data in MongoDB database, which pipes to a Flask webpage application on demand

Open Weather/Google Geocode API Interactor: Ideal Vacation Recommender — Oct 2021
Python (API, Pandas, Matplotlib) — github.com/cdenq/ideal-vacation-by-weather-predictor

- Interacted with CitiPy to generate 500 random cities, cross-referenced with Open Weather's weather statistics, performed EDA on global weather records, and plotted ideal vacation spots based on given weather conditions
- Created 8 visualizations and used linear regression to predict weather at any given location

Full-Stack Interactive Web Dashboard: Market Metrics on Video Game Industry — Jan 2022
Python (Flask), MongoDB, HTML/CSS/JavaScript — github.com/cdenq/web-dashboard-of-video-game-industry

- Team full-stack project that scraped market metrics on the video game industry and visualized on dashboard
- Analyzed 10k data points, maintained 5 MongoDB collections, created 19 visualizations
- Created 1 web app, 2 webpages, 1 report and 13 slides; presented findings to 3 Penn faculty/staff and 20+ students

EDA: Streaming Service Providers' Offer Package Analysis — Oct 2021
Python (Pandas, Matplotlib) — github.com/cdenq/streaming-service-analysis-and-offer-characterization

- Team Python project that performed EDA on Kaggle dataset on Netflix, Hulu, Disney+ offerings
- Analyzed 50k data points, created 30 visualizations, found 10 unique characterizations across 2 fields (TV Show, Movie)
- Created 1 report and 15 slides; presented findings to 3 Penn faculty/staff and 20+ students

SKILLS AND FRAMEWORKS

- **Languages**: Python, SQL (PostgreSQL), NoSQL (MongoDB), HTML/CSS/JS
- **Libraries/Frameworks**: SKLearn, Keras, TensorFlow, Pandas, Numpy, Matplotlib, Seaborn
- **Cloud Tools**: AWS (Sagemaker, S3, RDB), Hadoop/Spark, Docker, GCP Cloud Run, Google Collab, Git
- **Visualization Tools**: Tableau, Excel/VBA, Google Sheets/Google Apps Script
- **Miscellaneous**: APIs, web scraping, academic research, presentation, business development

HOBBIES

Sudoku • Chess • Riddles • Escape Rooms • Resource-Management Boardgames