# JONATHAN CHEN

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## EDUCATION

**Cornell Tech (Cornell University)**, New York, NY | GPA: 3.96 May 2024
***Master of Engineering in Computer Science***
**Relevant Coursework**: Machine Learning Engineering, Algorithms for Applications, HCI and Design, AI For Healthcare, Computer Vision, Data Science in the Wild, Productizing Machine Learning, Building Startup Systems

**Cornell University,** Ithaca, NY May 2023
***Bachelor of Science in Nutritional Sciences*** | GPA: 3.7
**Relevant Coursework**: Fundamentals of Artificial Intelligence, Data Structures and Functional Programming, Object-Oriented Programming and Data Structures, Networks II

## SKILLS

**Coding Languages:** Python (incl. PyTorch), HTML, CSS, OCaml
**Languages:** English, Chinese, Spanish (basic)

## EXPERIENCE

**Air Force Research Laboratory, Intern,** Dayton, Ohio June 2024 - Aug 2024
- Research topology optimization using a machine learning neural operator known as PCAnet
- Create figures for the figure story of the paper using various data visualization techniques
- Communicate findings through a presentation and a poster session
- Utilize high performance computing to iteratively train and test the model

**University of Maryland Medical School, Intern**, Baltimore, Maryland Jan 2021- May 2021
- Maintain cell cultures to test unique combinations of specific drugs' effects on MIA PaCa2 cells
- Build western blots to test the effects of pegcrisantaspase and venetoclax on protein expression
- Record all experiments in a lab notebook to observe trends in data

## PROJECTS

**Chest Disease Multi-class Classification** (Python, PyTorch, scikit-learn, seaborn) Fall 2023
CV System for classification between edema, cardiomegaly, and pneumonia based on chest radiographs
- Use PyTorch and scikit-learn libraries to train and validate a DenseNet-121 neural network
- Evaluate model using t-SNE, AUROC, confusion matrix

**OCaml Chess** (OCaml) Spring 2023
2-player chess game
- Test all functionalities of the program using 1,000 lines of code for debugging purposes
- Implement functions related to the creation of a new board, checking if a piece is blocked, etc.
- Facilitate efficient debugging sessions by identifying bugs and tracking debugging attempts

**Multi-Agent Search for Pacman** (Python) Spring 2023
Automation of Pacman movement to achieve optimal gameplay given any number of ghosts
- Engineer an adversarial search agent using a greedy minimax algorithm
- Upgrade minimax algorithm using alpha-beta pruning to improve the time complexity
- Build a probabilistic search agent that considers sub-optimal play of ghosts using expectimax algorithm

## LEADERSHIP

**School 4 Village, Communications Director**, Remote Jan 2020 - Jan 2022
- Establish system for data collection to obtain feedback that is later utilized for progress reports
- Create content for social media, blogs, as well as a workbook for a bootcamp in Kenya to promote problem-solving and tech skills for high school girls
- Collaborate with a school in Kenya to initiate a peer-mentorship program

## CERTIFICATION

Codecademy: Python 3
Codecademy: Learn C++