

# Jonathan Chen

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📍 Ithaca, NY

## EDUCATION

### Cornell University

Aug 2022 — May 2026

Bachelor's in Computer Science, Minor in Statistics

GPA: 3.95/4.0

- **Honors:** IBM Research Accelerate Program, Dean's List

**Relevant Coursework:** Analysis of Algorithms, Computer Networks, Machine Learning, Computer Systems, Robot Learning, Database Systems, Computer Vision, Computational Genomics, Data Structures

## EXPERIENCE

### Cornell University, Collaborative Discovery Lab

Aug 2024 — Present

Undergraduate Researcher

Ithaca, NY

- Develop AI computer vision tools for scientific discovery applications under Professor Jennifer J. Sun
- Tested Meta SAM2 and Ultralytics YOLOv8 models for marine animal tracking in occluded and noisy videos
- Designing vision-language model module using Python to improve object segmentation under transformations

### Oracle

May 2024 — Aug 2024

Software Engineer Intern

Austin, TX

- Developed contactless check-in features with PL/SQL and Oracle Database for hotel management application
- Removed 80% of manual effort by creating a Python microservice for attaching digital signatures to documents
- Designed CakePHP RESTful API to replace costly process for onboarding new hotels to OPERA Cloud
- Implemented OAuth integrations with cloud identity providers to make API calls between Oracle OCI services

### Intellian Technologies

May 2023 — May 2024

Software Engineer Intern

Rockville, MD

- Led web application development of unit reservation system built with React, Flask, Docker, and MongoDB
- Developed and deployed Python packages for collecting performance metrics from satellite user terminal data
- Increased data throughput by 500% for a log aggregation system using InfluxDB database, Flask, and Grafana

### Cornell University

Aug 2023 — May 2024

Teaching Assistant

Ithaca, NY

## PROJECTS

### Ithaca Transit | *Android, Kotlin, Jetpack Compose*

- Led Android mobile application development for a route planning mobile app with Kotlin and Jetpack Compose
- Architected API layer with Retrofit and Dagger Hilt to pull bus route information and calculate optimal routes
- Developed features for real-time bus location tracking using Google Maps API and GTFS data

### Deep Q-Learning Algorithm on Space Invaders | *Python, PyTorch, OpenAI Gym*

- Preprocessed 450 trajectories of image data from human players to train a behavior cloning model
- Built a Q-Learning neural network algorithm to improve agent performance by 500 points in Space Invaders

### Playlistle | *JavaScript, HTML, CSS, Python, Django, PostgreSQL, Docker, Linux*

- Built daily song-guessing game with Docker, Django, Spotify API, and PostgreSQL to store archived games
- Configured networking with a cloud VPS and Nginx reverse proxy, delivering to 20+ users on the internet

### Simulating Evolving Artificial Life | *Java, JavaFX*

- Developed the recursive descent parser and interpreter in Java for a novel "critter" programming language
- Led a team in architecting simulation software with evolving animal programs through random mutations

## SKILLS

**Languages:** Python, Java, Kotlin, C, C++, PHP, OCaml, TypeScript, JavaScript, HTML, CSS, SQL

**Libraries and Frameworks:** Android, React, React Native, Node.js, Django, Flask, PyTorch, CakePHP

**Tools and Software:** Gradle, Git, Linux, PowerShell, Nginx, Grafana, InfluxDB, Docker, MongoDB, PostgreSQL