# Songyuan Liu

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## Education

**Georgia Institute of Technology**

*Freshman*

- B.S. Computer Science  |  GPA: 4.0  |  Graduation: December 2025
- Threads: Intelligence, Information Internetworks

## Experience

**Optimization of Funding Plan For Florida Wild Plant Conservation Projects**                    *Remote, Nov 2022*

- Dug through possible quantitative factors & formed a Max and a Min objective functions subject to constraints
- Fledged a genetic algorithm-based model to solve the functions by permuting funding plans via simulating natural selection
- Cleansed the data in the financial report of 48 to-be-funded projects to feed the algorithm
- Wrote a technical report to the Board about the economic costs and returns of the model
- Our model allows the plan to raise $2,107,285 funds every year and see profits growing by 600% starting the 5th year
- Technical report at: https://ecoist-ste.github.io/personal-website/pdf/himcm_paper.pdf

**Georgia Tech iOS Club App Developer**                    *Atlanta, Jan 2023-present*

- Built a social app connecting users through their movie tiering list-centered profile
- Adopted Firestore database for accessing and studying user data
- Chose Xcode as testing environment (simulated on iPhone 14 Pro) for improving app's functionalities and debugging
- Meet continually with team members twice a week for tasks assignment aiming for launching

## Projects

**Intelligent Truck Dispatch System For Kitchen Waste Pickup**                    *Atlanta, June 2021- Jan 2022*

- Led a field study in Chongqing neighborhoods' trash cans distribution and garbage trucks' routing routine
- Designed a garbage trucks' route-optimization model in Python
- Reduced $CO_2$ emission by 425 kg per truck per year
- Project website: https://ecoist-ste.github.io/promotion-website/

**CS 1331 Final Project Javafx-based Application Fill-Me-Out**                    *Atlanta, Nov 2022- Dec 2022*

- Created an application allowing people to fill in commercial ideas and evaluate their market value
- Employed javafx.application to realize user-program interactive environment and neat appearance

**CS 2110 Gaming Project C-based 2D Game Run-Rabbit-Run**                    *Atlanta, March 2023- April 2023*

- Investigated working mechanisms behind Game Boy Advance
- Simulated Game Boy Advance Mode 3 by C to create an interactive game
- Users can use keyboards to control the rabbit to get to the finish line without touching poisoned grasses

## Skills

Major-related: Java, Swift & Swift UI, Python, C/C++, Matlab, HTML & CSS (Bootstrap), Docker, Javascript

Others: eagerness to learn, friendly service, patience, responsibility, dedication