

Daniel Lee

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EDUCATION

Georgia Institute of Technology

Bachelor of Computer Science

Atlanta, Georgia

Expected May 2024

- **Relevant Coursework and Concepts:** Data Structures and Algorithms, Combinatorics, Objects and Design, Systems and Networks, Computer Organization, Machine Learning, Computer Architecture, Linear Algebra, Differential Equations, and Probability and Statistics

EXPERIENCE

Georgia Tech Research Institute - Agricultural Robotics Lab

Undergraduate Research Assistant

August 2022 - Present

Atlanta, GA

- Worked under the supervision of Dr. Ai-Ping Hu to develop software to automate prune point detection within peach trees
- Formulated an algorithm to detect prune points in peach trees at 93.2 percent accuracy by training a YOLOv3 detector and utilizing geometric approaches such as stereo-triangulation

PROJECTS

Music Recommender and Classifier | *Python, NumPy, Pandas, Seaborn, TensorFlow, Scikit-Learn*

- Developed a neural network trained on GTZAN dataset to classify music genres of songs at 68 percent accuracy.
- Performed PCA to reduce dimensionality of dataset to meet a desired explained variance ratio and minimize overfitting.
- Utilized k-means algorithm to cluster songs and provided music recommendations.

MIPS-16 | *Verilog, Circuitsim*

- Designed and implemented a 5-stage pipeline processor to support MIPS16 ISA with operand forwarding and pipeline stalls to handle data hazards.

Tower Defense | *Kotlin, JUnit, Android Studio, Git*

- Led the development of a tower defense game practicing Agile methodology and adhering to GRASP/SOLID principles.
- Tested the functionality of application code through JUnit framework.

Virtual Memory Simulator | *C, GDB*

- Developed a virtual memory implementation that simulates 1 MB of memory, utilizing FCFS and Second Chance page replacement policies and an inverted page table.

CLUBS AND ACTIVITIES

3484 Magazine

Staff Writer

August 2021 – Present

Atlanta, Georgia

- Provided coverage on socio-economic and political issues surrounding Atlanta metropolitan area to 100+ civilians in Atlanta metropolitan area.

Healthcare Innovations

Mentor | Software Engineer

August 2021 – Present

Atlanta, Georgia

- Mentored 20+ incoming freshman, teaching basic concepts regarding Python, mathematics, and machine learning relevant to team's software work.
- Worked as a developer in the algorithm subteam to develop a CNN to segment and diagnose breast cancer at 92.6 percent accuracy.

SKILLS

Languages: Java, Python, C/C++, Julia, JavaScript, Kotlin, HTML/CSS, R, Verilog, SQL, L^AT_EX

Frameworks: React, JUnit, AWS

Developer Tools: Git, GDB, Docker, Vim, Android Studio

Libraries: pandas, NumPy, Matplotlib, Plotly, Pytorch bpy, OpenCv, TensorFlow, Keras, Scikit-Learn