Daniel Weiner

Student Researcher

Passionate and research-focused undergraduate student with a deep interest in machine learning and deep learning, seeking a challenging PhD position. Eager to contribute to innovative projects and collaborate with an advisor who can guide and inspire my journey in advancing AI technologies. My academic and project experiences have honed my skills preparing me to contribute effectively to research that aims to enhance computer cognition and leverage it for global betterment.

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TECHNICAL SKILLS

Operating Systems	Windows, Linux, Mac OS, iOS
Languages	C++, C, C#, Java, Python, JavaScript, HTML, CSS, MIPS Assembly Language, Lua, Bash/ZSH/Shell, SQL/MySQL, LaTeX
Frameworks/Libraries/APIs/Software	OpenCV, Flask, Pandas, NumPy, Scikit-Learn, Matplotlib, TensorFlow, Keras, SciPy, PyTorch, Git, GitHub, Jupyter, Microsoft 365, Google Cloud, Unity
Skills	Machine Learning (CV, RL), Deep Learning, Algorithms, Data Structures, Video Game Programming, Game Engine Programming, Calculus, Linear Algebra
Networking	LAN, WAN, Network Socket Programming, SSH

EDUCATION

Computer Science

CUNY Lehman College

06/2022 - Present *Bronx, NY - 4.0 GPA*

Courses

- Machine Learning
- Deep Learning
- Parallel Algorithms and Architecture
- Big Data Analysis in Cloud Computing
- Database Management
- Advanced Algorithms
- Probability and Statistics
- Operating Systems

Computer Science

SUNY Westchester Community College

06/2019 - 06/2022 *Valhalla, NY*

Courses

- Data Structures
- Calculus 1 and 2
- Discreet Math
- Computer Architecture

RESEARCH EXPERIENCE

Research Intern
Florida Atlantic University

10/2023 - Present *West Palm Beach, FL/Remote*

Tasks/Achievements

- Work on research to assist Professor Jason Hallstrom
- Project relating to CS3 smart streetscapes project from the NSF
- Building a recognition and localization system using in place CCTV cameras to help remove raccoons from the area of West Palm Beach
- Using YOLOv8, OpenCV, and python to build system, paper to be written describing our methods

Contact : Jason Hallstrom - jhallstrom@fau.edu

Amazon SURE Research Intern
Columbia University

05/2023 - 09/2023 *Manhattan, NY*

https://ceal.cs.columbia.edu

Tasks/Achievements

- Work in lab environment with supervising professor and graduate students
- Learned best practices for academic research
- Conducted user studies and analyzed interview transcripts for wants and needs
- Helped develop computer vision system to assist blind low vision (BLV) users in safe navigation of busy city streets
- Contributed to the writing of the poster and paper submissions of the project
- **https://www.engineering.columbia.edu/columbia-amazon-summer-undergraduate-research-experience-program**

Contact : Brian A. Smith - brian@cs.columbia.edu

PUBLICATIONS

Graduate Thesis

DNP Student Thesis on HIV+ Males
Author(s)

Chichi Nebo, Daniel Weiner

05/2023

Cleaned, analyzed, and visualized the data that was collected by the nurse at her clinic. Helped prove the results of her thesis project, and if her idea to help HIV+ patients had merit.

Dataset

Upcoming Columbia Statistics Department Apple Dataset
Author(s)

Jonathan L. Auerbach, Hane Lee, Andrew Davison, Daniel Weiner, Yvon Lu, Yuanxi Li, Reihaneh Malekian

TBD

TBD

Project overseen by Jonathan L Auerbach, Andrew Davidson, and Hane Lee. Collected specimens for the dataset. Analyzed and documented statistics of specimens.

Academic Paper

StreetNav: Leveraging Street Cameras to Support Precise Outdoor Navigation for Blind Pedestrians
Author(s)

Gaurav Jain, Basel Hindi, Zihao Zhang, Koushik Srinivasula, Mingyu Xie, Daniel Weiner

09/2023

Arxiv

Assisted in building computer vision system which assists BLV users in navigating busy city streets more safely. Conducted user studies with BLV volunteers. Helped analyze data from the system and the user studies. Contributed to the writing of the paper.

Grant Proposal

Audiohaptic Dioramas
Author(s)

Gaurav Jain, Daniel Weiner, Brian A. Smith

TBD

TBD

Built a prototype of the system in Unity. System helps BLV users “see” images. Assisted with testing of prototype.

PERSONAL PROJECTS

MLH Hackathon 2023 (08/2023 - 08/2023)

- Built diffusion model from scratch using the original papers written on the model and trained on CIFAR10: .https://github.com/danwein8/Stable-Diffusion/blob/main/StableDiffusion2.ipynb
- Built a Hugging Face Dreambooth model on top of Stable Diffusion for better results: https://huggingface.co/danwein8/my-dog-training
- Front end enabled users to query the model for different images based on their text.
- CLIP was used for text to image encoding.

DQN Agents (05/2023 - 05/2023)

- Built deep learning agents in Python using TensorFlow: https://github.com/danwein8/Deep-Q-Network-Agents
- Agents learned to beat different types of games using reinforcement learning (Classic control games, then Space Invaders).
- Games with both continuous and discreet action spaces were learned by the agents by using action space wrappers to convert the continuous to discreet.

Video Game Engine (12/2022 - 12/2022)

- Built a game engine from scratch in Java without any libraries or frameworks as part of CMP428 at Lehman, still working on expanding its capabilities. https://github.com/danwein8/LunarLanderGame
- Built 2 games with this engine for final project, one solo game, and one group game with 3 other students. https://github.com/danwein8/ClassGameEngine

Neural Network (12/2022 - 12/2022)

- Built a neural network class from scratch in Python without any scientific libraries as part of final project for CMP414 at Lehman, still working on expanding its capabilities.
- https://github.com/danwein8/Neural-Network

MLH Hackathon 2021 (02/2021 - 02/2021)

- Organized and collaborated in a team with 4 club members from OMEGA club as part of a virtual team and made a Valentine's Day themed web application using Flask and SQLite, our project won a prize.

HONOR AWARDS

Presidential Scholar (07/2023 - 07/2023)

Lehman College

- This designation is bestowed upon students who have met all of the qualifications for Dean's List and have exceeded the GPA requirement for Dean's List by earning a 3.9 GPA or higher

2021-2022 Club of the Year OMEGA Club (05/2022 - 05/2022)

SUNY Weschester Community College

- For having an active membership, adhering to the club mission, and providing a dynamic and meaningful involvement opportunity for students.

Presidential Scholar (02/2023 - 02/2023)

Lehman College

- This designation is bestowed upon students who have met all of the qualifications for Dean's List and have exceeded the GPA requirement for Dean's List by earning a 3.9 GPA or higher

Key Award (05/2022 - 05/2022)

SUNY Weschester Community College

- For making consistent and outstanding contributions to the College community by exemplifying characteristics of quality leadership, service, and personal development.

CERTIFICATES

Machine Learning Specialization Courses - Machine Learning Specialization (04/2023 - 04/2023)

https://coursera.org/verify/specializat ion/PETNPLLHTGMJ

Coursera, DeepMind.AI, Stanford Online – Advanced Learning Algorithms Certification (03/2023 - 03/2023)

https://coursera.org/verify/SKDJU8GTJXJN

NVIDIA Building Transformer-Based Natural Language Processing Applications (11/2023 - 11/2023)

https://courses.nvidia.com/certificates/ccd03726c1144d1cb2016f234133f009/

Coursera, DeepMind.AI, Stanford Online – Regression and Classification Certification (03/2023 - 03/2023)

https://coursera.org/verify/Y4ULUZSQ6WNK

Coursera, DeepMind.AI, Stanford Online - Unsupervised Learning, Recommenders, Reinforcement Learning (04/2023 - 04/2023)

https://coursera.org/verify/JR9LERQTKHPT

NVIDIA Fundamentals of Deep Learning (11/2023 - 11/2023)

https://courses.nvidia.com/certificates/ef1ca388dfb745e7ab46659413bc2bd9/

WORK EXPERIENCE

CS3 Student Leadership Counselor
Lehman College/Columbia University/NSF

10/2023 - Present *Manhattan, NY/ Remote*

Achievements/Tasks

- Act as a representative of Lehman College
- Attend Research Exchange meetings
- Attend SmartStreet Scapes meetings
- Interact with other student counselors from Columbia University, Rutgers, Florida Atlantic University, and University of Central Florida

Contact : Jennifer Laird - Jennifer.Laird@lehman.cuny.edu

Tutor
SUNY Westchester Community College

06/2021 - 06/2022 *Valhalla, NY*

Achievements/Tasks

- Taught students C++ and Data Structures one-on-one and helped more students pass according to the professor
- Made specialized lesson plans to help students understand what was going on in class
- Assisted students in understanding concepts themselves without giving away the answers

Club Teacher
SUNY Westchester Community College

06/2021 - 06/2022 *Valhalla, NY*

Achievements/Tasks

- Taught students video game programming, Lua and Love2D framework to have club members make such games as Breakout and Flappy Bird
- Created lesson plans and live coded in front of the club
- Organized educational events such as hackathons and raspberry pi tutorials

ORGANIZATIONS

Lehman Google Developers Student Club (09/2023 - Present)
Vice President

WCC OMEGA Club (09/2021 - 06/2022)
Founder / President

Lehman CS Club (06/2022 - Present)
Member