Sneh **Gupta**

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Education

M.S. in Computer Science, Georgia Institute of Technology (GPA: 4.0) *Aug 2023 - May 2025 (Expected)*

B.S. in Computer Science and Biology (Double Major), Univ. of Washington (GPA: 3.87) *Sep 2019 - Aug 2023*

Work Experience

Machine Learning Intern, The Main Branch *May 2024 - July 2024*

- Refined a machine learning model that finds and relabels erroneously labeled data in a noisy manually annotated dataset.
- Used this pseudo-labeled data as input to train and fine-tune an object tracking and identification detection model.

Software Development Intern, Makeability Lab *Jan 2023 - June 2023*

- Improved user experience on Project Sidewalk, which works to gather information about accessibility of sidewalks in cities, and reports findings.
- Found and fixed bugs in production code, added features including filtering tags for sidewalk classification using JavaScript/Scala.

Research Assistant, Brian Beliveau Lab *June 2021 - Dec 2021*

- Calculated quality metrics to compare DNA probes with single nucleotide polymorphisms (SNPs) based on the specificity of binding to human DNA in FISH experiments. Visualized patterns and filtered the probes resulting in reduced wet lab costs.
- Built a pipeline for processing the data and optimized run time by 20% using parallel processing in a Linux cluster environment.

Teaching Assistant, Data Programming (Python) & Ed Tech *Sept 2022 - Present*

- Guest lecturer, taught weekly class for 28 students, covering lecture material and practice problems. Contributed to making material for homework, practice problems and exams.

Research Assistant, Warren Ladiges Lab *Mar 2020 – May 2021*

- Conducted statistical analysis of data on the effects of an anti-diabetic drug, acarbose, resulting in a publication as first author.
- Quantitatively surveyed the cells to assess changes in cell patterns in diseased mice. Created heat maps to visualize density distribution and other factors of the cells.

Projects

Hateful Image Classification Pipeline, Deep Learning *Jan 2024 - April 2024*

- Conditionally captioned images using a pre-trained Bootstraping Language-Image Pre-training (BLIP). Google Vision API was used to embed images features and demographic information.
- The embeddings along with a definition of hateful speech was used to prompt GPT-4 in order to output negative and positive characteristics.
- Personally fine-tuned text based classification models, BERT, RoBERTa and CLIP on the GPT-4 output and compared their performance.

Smart Song Prediction, Machine Learning *Aug 2023 - Dec 2023*

- Developed personalized music recommendation for users based on their historical listening patterns.
- Clustered sessions (K-Means, DBSCAN, GMM) and tracks from a Spofity dataset to create users and genres. Visualized the results after dimensionality reduction methods (PCA, t-SNE).
- Implemented Supervised ML on time-series user data using a specialized Recurrent Neural Network (RNNs), Long Short-Term Memory (LSTM).

Automated Plant Care System, Embedded Systems *Jun 2023 - Sep 2023*

- Measured moisture, sunlight, temperature in the plant environment using sensors on Arduino Mega board. Based on user specified plant via keypad, gave feedback on how to take care of the plant.
- Tasks were scheduled using Free RTOS, operated with high speed (P <= 20ms) and CPU load.

Social Networking Mobile App, Back End Developer *Jun 2022 - Sep 2022*

- Ideation, survey of potential customers and targeted market segment and user testing.
- Created backend server using Django/Python and managed the SQL database. Connected to the frontend using REST APIs.
- Created matching system for users pased on their profiles and preferences after dimensionality reduction using singular value decomposition.

Publications

- Sneh G, Zhou J, Warren L. The antidiabetic drug acarbose suppresses age-related lesions in C57BL/6 mice in an organ dependent manner. Aging Pathobiology and Therapeutics, 2021.
- Undergraduate Symposium at the University of Washington. Change in Astrocyte numbers with Age

Skills

- Python, Java, C/C++, SQL, JavaScript, Scala
- PyTorch, TensorFlow, Pandas, Time Series Modeling, Data modeling & Evaluation, Test Driven Development, Django

Courses

- Deep Learning, Computer Vision, Machine Learning, Artificial Intelligence, Distributed Systems, Embedded Systems, Databases