# Aaron Alvarado Kristanto Julistiono

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## Education

**Massachusetts Institute of Technology (MIT)**, Cambridge, MA **May 2025**

- Bachelor of Science in Computer Science and Engineering and Bachelor of Science in Mathematics
- GPA: 5.0/5.0
- Relevant Coursework: Machine Learning, Introduction to Deep Learning, Software Construction, Computer System Engineering, Fundamental of Statistics, Design and Analysis of Algorithms, Algebra, Mathematical Problem Solving

## Relevant Skills

- **Computer Science:** Algorithms, Data Structure, Object Oriented Programming, Database, Machine Learning
- **Programming Language:** Python, C, JavaScript, MySQL, MongoDB, scikit-learn, pandas
- **Mathematics:** Linear Algebra, Statistics and Probability, Problem Solving
- **Other:** Leadership, Collaboration, and Communication

## Projects

**Investigating Different Architectures for Domain Adaptation on Sentiment Analysis**

Skills: Machine Learning, Leadership, Collaboration

- To develop a good domain adaptation model on sentiment analysis, I led a team of three to compare three architectures for this task –one baseline, one with data aggregation, and one with a weighted loss— and to make analysis on the resulting models, and concluded that the weighted loss architecture made the most accurate model

**Improving Accuracy and Mitigating Bias and Uncertainty of Vision System Competition**

Skills: Deep Learning

- To de-bias the vision system, I weight the probability distribution of the training samples during training, allowing biased samples to be sampled less frequently, and letting the architecture learn under-represented features better
- To reduce uncertainty of the system, I used dropout on the convolution layers of the system, which increases regularity by simulating the effect of ensembling multiple copies of the model while saving computation cost
- To increase the accuracy of the system, I stop training the system when the validation accuracy is above a threshold

## Experience

**Micronotes.ai** **May 2023 – August 2023**

*Machine Learning Intern*

- Uses machine learning techniques such as decision trees, boosting, and hyperparameter tuning to help financial institution predict the likelihood of a customer accepting an offer
- Implements statistical analysis techniques using pyspark to perform feature selection on ~10,000 distinct features
- Cleans data from its raw form to a format that can be easily digested by the machine learning models

**MIT Institute for Data, Systems, and Society** **Feb 2023 – May 2023**

Undergraduate Researcher – *Trustworthy Deep Learning*

- I investigated the generalization properties of the Stochastic Mirror Descent optimizer on l^p potentials
- I set up several experiments to see what this algorithm does to the weights on a neural network, and how it increases or decreases test accuracies

**Harvard-MIT Division of Health Sciences and Technology**, Cambridge, MA **Sep 2022 – Feb 2023**

Undergraduate Researcher – *Measuring Impact of Physician-Scientists on Innovation, Research, and Economy*

- To provide a data analysis tool, I set up and designed several MySQL databases and collect, merge, and store data to those databases through Python scripts with cross-functioning partners, allowing data to be analysed easily through a centralized database system
- For team coordination, I presented weekly updates on work to receive and act on feedbacks from other student researchers and supervisor, allowing ideas to be created and implemented faster
- Established and managed a GitHub repo for the research group to track codebase update and improve collaboration

## Awards

- Honourable Mention for Putnam Competition 2022 (Rank 66/3415)