

# Amish Sethi

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## EDUCATION

<b>University of Pennsylvania</b> <i>Junior – Computer Science</i>	Philadelphia, Pennsylvania Cumulative GPA: 4.00/4.00	<b>Graduating – May 2026</b>
<b>Pine-Richland High School</b>	Gibsonia, Pennsylvania Cumulative GPA: 4.00/4.00	<b>Graduated – June 2022</b>

## TECHNICAL SKILLS

Java, Python, MatLab, JavaScript, HTML, C#, TensorFlow, Keras, PyTorch, PHP, scikit-learn, MySQL, Arduino, Raspberry Pi  
<https://github.com/AmishSethi> <https://github.com/ASethi04> <https://amishsethi.github.io/personal-website/>

## WORK EXPERIENCE

**Best in Grass** | Remote Machine Learning Intern **December 2024 – Current**

- Built a large-scale structured dataset by extracting terpene and cannabinoid from unstructured PDFs using cutting-edge vision-language models (e.g., table-transformer, InternVL).
- Applied supervised learning and clustering methods to map chemical compositions to user-reported effects
- Developed a strain-effect prediction pipeline used for product recommendation

**Roadbotics** | Summer Internship | Pittsburgh, PA **June 2021 – August 2021**

- Used computer vision in TensorFlow to detect, classify, and locate traffic signs from input video
- Developed a Mask-RCNN deep neural network achieving 90 percent accuracy in detecting traffic signs
- Used by PA state government to keep track of road assets

**Cloudcast Computing** | Paid Summer Internship | Pittsburgh, PA **June 2020 – August 2020**

- Developed a web interface in Laravel (PHP framework) for a teacher to view their dashboard with all their lectures
- Created an “attendance” sheet using Google Meets API that shows which students attended the lecture and for how long, increasing overall engagement rate 48 percent for users
- Developed model in OpenCV to blur any children’s faces in case they were recorded and going to be uploaded

## RESEARCH AND PROJECTS

**Dolphin: A Framework for Neurosymbolic Learning** | ICML 2025 (Lead Author) **August 2024 - Current**

- Created DOLPHIN, a novel framework combining symbolic reasoning and neural computation using CPU-GPU hybrid execution
- Achieved up to 62x faster convergence than baselines across 13 benchmarks spanning text, image, and video modalities
- Demonstrated state-of-the-art accuracy on complex reasoning tasks, outperforming Scallop, ISED, and IndeCater+

**CLAM: Chaining LLM Adapter Modules** | ICML’s ES-FoMo-II Workshop 2024 (Second Author) **January 2024 – Current**

- Developed CLAM, a framework unifying parameter-efficient finetuning, quantization, and pruning for LLMs
- Enabled chaining of adapters with low overhead and high modularity, outperforming state-of-the-art methods by up to 6.5%
- CLAM achieves superior trade-offs in compression and downstream performance, beating QLoRA while halving active bits
- I led Github contributions to the project

**LASER: Video Understanding Foundation Model** | 2025 Neurips submission (Lead author) **January 2025 - Current**

- Proposed LASER, a neurosymbolic foundation model for spatial-temporal reasoning from video-caption data
- Leverages high-level logic derived from LLM prompts and contrastive/temporal/semantic losses
- Demonstrates improved video understanding performance on common benchmarks such as OpenPSVG
- Injecting scene graphs with LASER significantly improves performance when integrated into embodied agent simulations

**FIIGNET: Synthetic Data for Aquaponics** | National University of Singapore (First author) **May 2023 – August 2023**

- Created a generative AI pipeline in PyTorch (FIIGNET) to synthesize images of fish with specified diseases
- Trained early detection models on synthetic + real datasets, with FIIGNET improving accuracy by 17%
- Presented paper and poster at the SERIUS program at the National University of Singapore

**Genetics Research** | University of Pittsburgh (First author) **November 2019 – January 2021**

- Utilized machine learning, clustering, and dimensionality reduction algorithms in scikit-learn to identify which genes are expressed differently between those with Alzheimer’s and a control group
- Used model to predict likelihood of Alzheimer’s based on one’s genes with 98% accuracy
- Selected as an ISEF (International Science and Engineering Fair) finalist for this project
- Published preprint of this research has over 1,000 views and 6 citations