

ARTIFICIAL INTELLIGENCE CLUB AT MSU



Newsletter Volume 3

NOV 2022



Preface

Dear members, donors, partners, and community,

Our innovations and arduous efforts have allowed us to successfully instill ourselves in the RSO culture and cemented our roots across campus in a remarkably short period of time. We are no longer a niche interest club but instead a major academic and social attraction for our members. Our workshops and projects have gathered hundreds of people from multiple backgrounds and levels of expertise, and our executive board has grown to better attend to their rapidly growing needs.

Our hard work is rewarded and motivated every time we acknowledge the impact we drive across the university through each of our members. More than ever, we remain committed to our core mission of empowering students with knowledge in Artificial Intelligence, while we aim to become Michigan State's student hub for the learning and application of AI. I look forward to an exciting year for the AI Club at MSU.

— GABRIEL SOTELO



WORKSHOP RECAP



2022

We encourage you to browse the content in the workshops section of our website, or join the conversation in our workshop Discord forums. AI Club hosts weekly workshops introducing concepts in AI, allowing students of all backgrounds to gain hands-on experience and discover tools through guided lessons and open-ended excersises. Anyone is welcome to attend, and bring a friend. No experience is necessary.

The Mystery of the Sorting Hat

September 12th, 2022

Machine learning might seem like an intimidating topic. But in the first workshop of the year, we introduced the essence of machine learning with a fun, interactive activity. It featured a sorting hat that classified students by their name into groups by an unknown rule. Students learned that by using the hat's input and output data to try to guess its mysterious rule, they were playing the role of a classification algorithm.

Afterwards, students had the opportunity to compete in a Kaggle challenge featuring the same sorting hat, but with a more complex rule.



What is Hugging Face?

September 19th, 2022

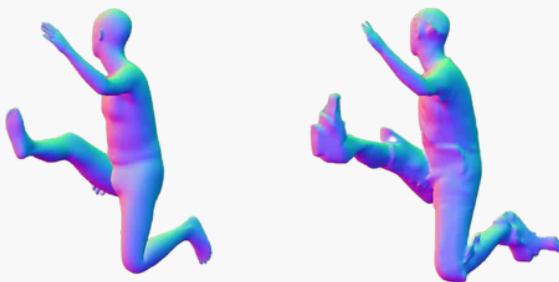
While studying AI, we learn to train our own models, but oftentimes, it's more efficient to take advantage of resources that the AI community has made available. In this workshop, we learned about Hugging Face, one of the most popular open-source hubs for pre-trained models. Students explored its various demonstrations of text-to-image generation, DALL-E mini. As with most workshops, students had the chance to share and discuss their most interesting findings through the club's Discord forum.



Cyberpunk Cat ↑

Clothed Human Digitization ↓

Capybaras fighting with lightsabers ↓





Compute the Newt

September 26th, 2022

Now that we've seen what the Hugging Face models can do, students applied it to create something original. In this workshop, we learned how to use Hugging Face's transformer models in Python to accomplish basic natural language processing tasks, such as sentiment analysis.



Would You Survive the Titanic?

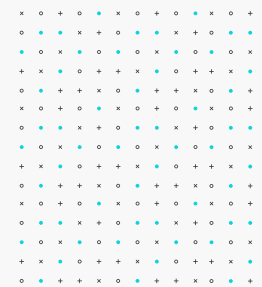
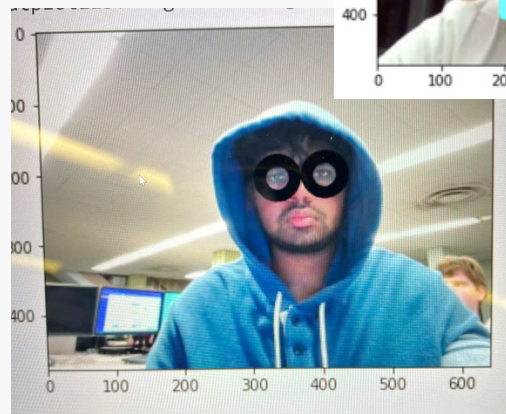
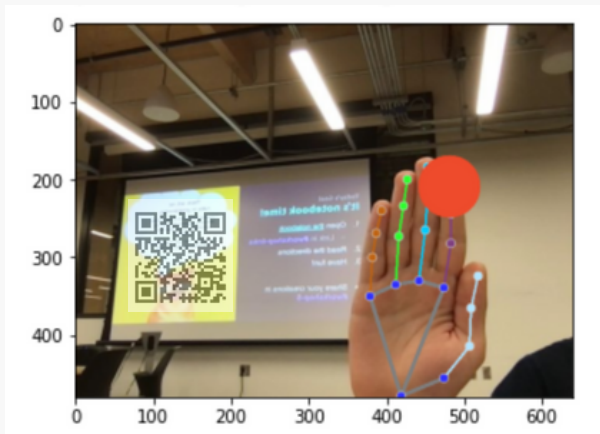
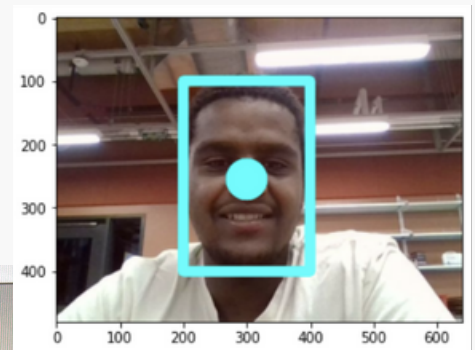
October 3rd, 2022

We learned how to use decision trees to perform classification on datasets with a large number of features. We started by hard-coding a model to classify passengers of the infamous Titanic dataset, then trained a model to better predict if our own club members would survive the shipwreck!

Image Processing using MediaPipe

October 10th, 2022

Students got hands-on experience with editing images using the AI-based Python library, MediaPipe. They used MediaPipe to detect faces, hands, and more! Check out the filters that our members submitted via Discord.





MEMBERS HIGHLIGHT



Neel Joshi

Hometown: Devgad, Maharashtra, India

Major: Computer Science

Class Standing: Graduate

Project Lead: Fetal State Predictor (Basic Learning Models)

This project aims for predicting the state of fetus inside the mother's womb. Our plan is to create an web app that will allow doctors to understand whether the condition of baby inside is Normal (which is ok), Suspect (something should be taken care of) or Pathological (something serious). With the help of Neural Networks, Hyperparameter Optimization and Web Development we will assist doctors to make sure that baby inside the mother's womb is in sound condition!!!

What technologies are you using for your project?

Tensorflow, TensorflowJS, Keras and ReactJS.

What are you most excited to learn about by participating in this project?

How we can create a software for Doctors that will help them to know the condition of the baby.



Sanaye Lewis

Hometown: Atlanta, GA

Major: Computer Science Major, Cognitive Science Minor

Class Standing: Sophomore

What is your favorite part about the club?

Getting to learn how to use AI and apply it in workshops.

What do you hope to get out of the club?

I have learned about the various applications AI has to offer and about different open source code and models that I can use.

What have you learned from the club?

I really enjoyed getting to create my own filter last year and using the hugging face model this year.

What is your favorite memory/event of the club?

To learn more about the applications of AI and different models that can be use.



PROJECT UPDATE

Projects are an excellent way to learn and apply skills in AI, software development, research, and teamwork! This semester, the club is overseeing multiple projects led by members, who are working together to create solutions to problems using various AI and computer science technologies. These projects allow you to apply your skills, and create a final product at the end of the semester. Members can use these projects to showcase their abilities and knowledge that they have gained. All of these skills, as well as the final product, can add hands-on professional experience to your resume.



Featured Project 1: Milburn Pennybags (Monopoly AI)

The AI for the board game Monopoly that will be trained by Reinforcement Learning. Its name is Milburn. After living a long and successful life it was time for Mr. Milburn Pennybags to come to terms that his life is almost over. Behind him, he left the biggest real-estate empire known to humankind. But, he could not accept the fact that it all may disappear since he does not have a worthy successor. So he came up with an idea

to hire data scientists from MSU to build him an AI that will be as good as him and if not better. His goal is to make this AI own the world! Will the team create a money making machine or a money burner, we shall find out...

Featured Project 2: Intra-Building Navigator

Our goal is to build a "Google Maps"-style application that guides the user around the inside of a building. Our current plan is to develop this project on a small scale for desktop, then eventually scale up to a mobile app. We will use AI image/video processing, device location services, and pathfinding algorithms to determine where the user is currently located and what actions they should take to get to their destination.



Featured Project 2: Spotify Personality Predictor

This project utilizes data collected from our friends Spotify accounts. We use their listening history as well as their responses to a personality questionnaire to create an accurate dataset. With this dataset, we are training a model to identify a person's personality based on factors prevalent in their music taste.



MEET THE E-BOARD

2022

Due to increased demand for AI Club content, we expanded our E-Board to 13 members this semester! Learn more about them here.

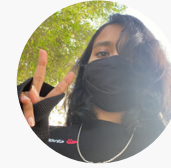


Gabriel Sotelo

President

Computer Science + Math Major
Junior

I love tech and AI, and I believe people need to be empowered with them. We live in exciting times!

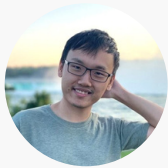


Sania Sinha

Vice President

Computer Science Major
Sophomore

I am passionate about research in AI! Besides CS, I love cats and art.



Fanurs Teh

Graduate Advisor

Physics Major
PhD

If you think I'm an awesome programmer, that's because I use two copilots when I code - GitHub Copilot and my cat!

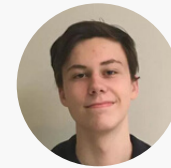


Morgan Sandler

Graduate Advisor

Biometrics + Pattern Recognition Major
PhD

I'm a Graduate Research Assistant in the Integrated Pattern Recognition and Biometrics (iPRoBe) Lab with a specialization in Speech Recognition and Natural Language Technologies.



Owen Cochell

Project Director

Computer Science Major
Sophomore

I enjoy reading, working on personal projects, and spending time with friends and family. I am looking forward to working with members of the club!

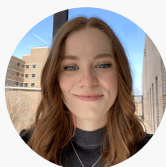


Josh Pullen

Workshop Director

Mathematics Major
3rd Year [Senior]

I've loved coding ever since I was a little kid, and now I love teaching too!

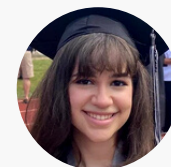


Rachel Townson

Marketing Director

Computer Science Major
Senior

I'm a concert enthusiast, a programmer, and a cat person. Ask me about my taste in music (at your own risk).



Karoline Yashin

Secretary

Computer Science Major
Sophomore

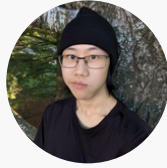
I'm from Plymouth, Michigan. My interests include reading, traveling, and watching movies.



Uzair Mohammed

Technical Coordinator
Computational Data Science
Major
Sophomore

Hi! I love to share my interests in AI and math through teaching, and I'm excited to meet curious learners through workshops and projects. In my free time, I enjoy reading, hiking, and art.



Darrian Chen

Treasurer
Computer Science Major
Freshman

Hi everyone, I'm Darrian and I'm a freshman studying computer science. I'm pretty interested in all things engineering/comp sci related. I like to play chess, tennis, and read manga in my free time.



Alexander M Grunewald

Technical Coordinator
B.S. Data Science and B.S.
Statistics Major
Junior

I think that it is important for everyone to be exposed to the capabilities of AI and their applications and have easy access to these resources. Besides AI and Data Science, I enjoy Music, Strategy, Games, and Cooking.



Vy Hoang

Outreach Coordinator
Supply Chain Management
Major
Sophomore

Joining the AI club is my new journey, which brings me a lot of chances to approach knowledge about Tech and AI. This is also such a great experience for me to make new talented, help other people, and challenge myself with such an interesting role!



Kaitlyn Tuttle

Outreach Coordinator
Computer Engineering
Freshman

I deal primarily with the creative aspects of our marketing team. I am very passionate about mental health awareness and I also love to crochet. I'm also a dog person. Nice to meet you all!

Thank you to everyone who has supported us in running the AI Club! We couldn't do what we do without our dedicated members :)



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Follow us on Instagram for more AI Club content!





Thanks again to everyone who has been involved in the AI Club, from undergraduate to graduate to PhD students and faculty. We're looking forward bringing you more AI knowledge and learning experiences through the rest of the semester.

If you made it this far, there is a secret QR code hidden somewhere in this newsletter! Scan it and fill out the form for the chance to win some free AI Club merch.

Make sure to follow all of our social medias for more updates on what we've been up to!

