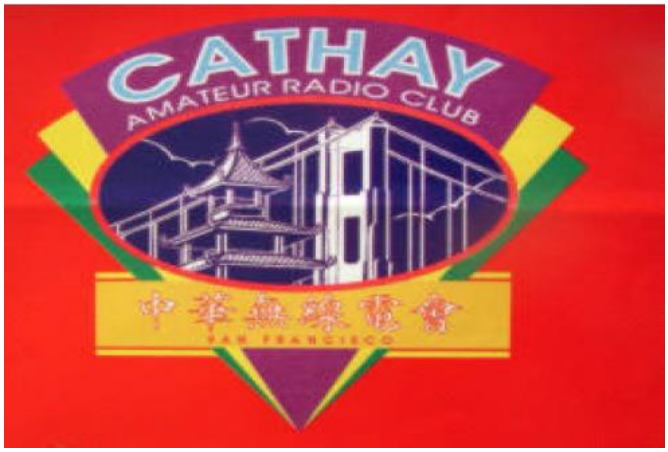

Cathay June 2022

www.cathayradio.org

President: George Chong, W6BUR **email:** *W6BUR@comcast.net*
Vice President North: Leonard Tom, *NX6E* **email:** nx6e@hotmail.com
Vice President South: Bill Fong, *W6BBA* - **email:** w6bba@arrl.net
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Editor: Rodney Yee, *KJ6DZI* - **email:** rodyee2000@yahoo.com
Treasurer: Vince Chinn aka Mingie, *W6EE* - **email:** vince@vincechinncpa.com
Web Master: Edison Fong – *WB6IQN* - **email:** edison_fong@hotmail.com
Mission: The Cathay Amateur Radio Club is basically an active social club of Ham Radio Operators and their spouses. We support local community requests for HAM emergency communications. Several of us are trained in CPR/ First Aid and are involved with community disaster preparedness.

Monday Night Net Time: 9 PM Local Time/PST, Repeater: WB6TCS - RX 147.210, TX 147.810, Offset +0.6 MHz, CTCSS/Tone PL100 Hz

Please note: Repeater: N6MNV UHF 442.700 Mhz, Offset +5MHz, CTCSS/Tone PL 173.8 Hz in South San Francisco is cross linked every Monday Night Net at 9 p.m. to WB6TCS 2-meter repeater.

The CARC Monday night net is the best way to find out the latest club news. All check-ins are welcome.

Message from the President: George Chong, *W6BUR*

Hello CARC Members and Friends;

Many thanks to Mr. Denis L. Moore – WB6TCS for the use of his repeater for our CARC Monday Night Net.

I wish to thank our CARC members that set aside their valuable time to participate in our Monday night's nets.

ARRL Field Day June 25 - 26, 2022 Announcement

CARC member Ed Fong - – *WB6IQN* is hosting the Annual CARC / SARES 2022 ARRL field day at the exclusive Fairbrae Swim and Racquet Club in Sunnyvale.

Yes, after a 2+ years hiatus, on Saturday June 25, 2022 at 2 PM, we have the wonderful opportunity to come together and meet face to face and renew our HAM club friendships, sharing a **FREE catered dinner**, talking about HAM Radio stuff and participating in ARRL field day.

Additional information is provided toward the end of this newsletter.

Many thanks to Ed Fong for taking on the huge task of organizing and running the combined CARC / SARES ARRL 2022 Field Day event.

COVID-19 Vaccine Update:

On Tuesday March 29, 2022 the FDA has approved a 2nd COVID-19 Booster shot for folks that are age 50 +, that are immunocompromised and previous booster shot taken at least 4 months prior.

For additional information, see link below:

https://www.fda.gov/news-events/press-announcements/coronavirus-covid-19-update-fda-authorizes-second-booster-dose-two-covid-19-vaccines-older-and

Chat sub s'em to all you CARC members! - George W6BUR, CARC President.

Tech Article Introduction:

In the news, that some Grocery stores are now using a combination of store cameras and artificial intelligence (Intel nuc hardware) to detect certain customer body gestures to alert store staff of a possible shoplifting event in progress. Video of the event is sent to a smart phone that is then shown to the confronted customer.

Please see: https://www.kron4.com/news/national/artificial-intelligence-used-to-stop-shoplifting/

This month's tech article is about additional in roads at with Artificial Intelligence at Sandford University.

Please read the **Tech Section** of this newsletter for additional information.

Public Service Announcements

HAM CRAM / HAM Licensing

For upcoming HAM Licensing locations please refer to:
http://www.arrl.org/find-an-amateur-radio-license-exam-session

Auxiliary Communications Service (ACS)

The Auxiliary Communications Service (ACS) is a unit of trained professionals who supply communications support to the agencies of the City and County of San Francisco, particularly during major events/incidents. ACS goals are the support of gathering and distribution of information necessary to respond to and recover from a disaster.

The ACS Net begins at 1930 hours (7:30 p.m. PT) local time each Thursday evening, on the WA6GG repeater at 442.050 MHz, positive offset, tone 127.3 Hz. The purpose of this net is to practice Net Control skills, practice checking in with deployment status in a formal net, and to share information regarding upcoming ACS events. Guests are welcome to check in. ACS members perform Net Control duty on a regular basis On the second Thursday of each month, the net is conducted in simplex mode on the output frequency of the WA6GG repeater, 442.050 MHz no offset, tone 127.3 Hz.

ACS holds its General Meetings on the third Tuesday of each month from 1900 hours to 2100 hours local time. Currently meeting are exclusively conducted over Zoom during the COVID-19 pandemic, ACS looks forward to meeting in person again as soon as possible.

Upcoming meeting dates in 2022 are:

- June 21, 2022
- July 19, 2022
- August 16, 2022

Location of in person future ACS meetings are yet to be determined as the regular location is under reconstruction until January 2023. All interested persons are welcome to attend. For further information, contact Corey Siegel KJ6LDJ <kj6ldj@gmail.com>.

For more information, please attend an ACS meeting, check in on the ACS radio net, or call 415-558-2717.

Free Disaster Preparedness Classes In San Francisco – NERT Taught by San Francisco Fire Department (SFFD).

http://sf-fire.org/calendar-special-events

TBD

+ Recertifications - Coming Soon!

Pre-register here!

https://www.eventbrite.com/e/are-you-a-nert-graduate-looking-to-recertify-pre-register-here-tickets-228380330717?aff=odcleoeventsincollection

This is not for a specific date or location.

San Francisco Fire Department NERT is collecting information from NERT Graduates to help us plan for the new year. By signing up here, you will receive priority notification about upcoming recertification opportunities. This is for any NERT graduate, regardless of when you graduated or whether your NERT certification has expired. Thank you so much for your commitment to NERT and for providing us with information about when you last trained, etc.

Sign Up For Training Classes

This is not for a specific date or location.

San Francisco Fire Department is collecting contact details from prospective students so we can let you know when classes are available. We will email you when classes become available. We plan on holding multiple trainings for new NERTs in 2022 and the information you provide will help us plan. Thank you!

https://www.eventbrite.com/e/never-taken-nert-before-let-us-know-you-are-interested-in-2022-trainings-tickets-125825993935?aff=odcleoeventsincollection

***SFFD DOT** is the Fire Department Division of Training. All participants walking, biking or driving **enter through the driveway gate on 19th St.** between Folsom and Shotwell. Parking is allowed along the back toward the cinderblock wall.

Visit ***www.sfgov.org/sffdnert*** to learn more about the training, other locations, and register on line. Upcoming Special NERT Events.

San Francisco Police Department: Auxiliary Law Enforcement Response Team (ALERT)

The Auxiliary Law Enforcement Response Team (ALERT) is a citizen disaster preparedness program designed. The ALERT program is for volunteers 16 years of age or older, who live, work, or attend high school in San Francisco.

Graduates of the San Francisco Police Activities League (P.A.L) Law Enforcement Cadet Academy are also eligible to join.

ALERT volunteers will no longer need to complete the Fire Department's Neighborhood Emergency Response Team (NERT) (www.sfgov.org/sfnert) training and then graduate into two 8 hour Police Department course specifically designed for ALERT team members.

ALERT members will work closely with full-time and/or Reserve Police Officers in the event they are deployed after a disaster. The Basic ALERT volunteer will have no law enforcement powers other than those available to all citizens.

SFPD ALERT Training (New Members)

The next SFPD ALERT training class has been scheduled for: TBD

* Class date indicated are only for new members

IMPORTANT- All participants must complete the background interview process in order to be eligible to attend the ALERT training class.

Eligible ALERT participants may register for a training class by contacting the ALERT Program Coordinator, Marina at sfpdalert@sfgov.org, or by telephone at 415-401-4615.

SFPD ALERT Practice/Training Drill

All active/trained ALERT members are asked to join us for our next training drill, via scheduled for on

TBD

For more information on the San Francisco Police Department ALERT Program, email us at sfpdalert@sfgov.org, or call Lt. Marina Chacon (SFPD Ret.), SFPD ALERT Program Coordinator, at (415) 401-4615.

For additional information on the web please refer to:
https://sfgov.org/policecommission/alert

Tech Article

https://hai.stanford.edu/news/training-smarter-bots-real-world

Automation and Robotics

Training Smarter Bots for the Real World

With the IQ-Learn approach, robots simply watch humans to learn how to behave.

May 11, 2022 | Nikki Goth Itoi

Today's robots are good at learning exact tasks but can't adjust to changes in the environment. A new approach to Imitation Learning could create more adaptable robots that can learn faster from humans. | iStock/nd3000

In the fall of 2021, dozens of computer scientists submitted their best work to an AI bot challenge hosted by the Conference on Neural Information Processing Systems (NeurIPS), an annual machine learning event for distinguished researchers. Participants spent months preparing their agents to outperform the competition on four “almost lifelike” tasks in the virtual world of Minecraft:

1. Find a cave
2. Make a waterfall
3. Create a village animal pen
4. Build a village house

To mimic the complexity of real-world situations, the organizers required each agent in the competition to learn the tasks by watching human demonstrations, without the use of rewards that typically reinforce a desired robot behavior. This was a significant change from prior contest rules, and it meant that most teams would have to cope with a slower and more complicated bot training process.

For Divyansh Garg and Edmund Mills, who entered the competition as Team Obsidian just weeks before the deadline, the requirement presented an opportunity to shine. With less time and fewer resources than other teams, they rose to the top of the leaderboard and placed first in the Imitation Learning category (designated for agents that interact with their environments to learn rewards or policies). To their surprise, Team Obsidian also placed second overall — a noteworthy achievement because their agent did not use human feedback to boost its performance while playing the game, while many of their competitors did.

The key to Team Obsidian’s remarkable success is a breakthrough approach to Imitation Learning called IQ-Learn. In the months leading up to the competition, which is officially known as the MineRL Benchmark for Agents that Solve Almost Lifelike Tasks (BASALT) challenge, Garg was developing this new method in collaboration with Stefano Ermon, an associate professor in the Department of Computer Science at Stanford. IQ-Learn already could play classic Atari games better than a human expert. And it was fast becoming the state-of-the-art for training AI agents that work in dynamic environments.

A Passion for Deep Learning

Today’s industrial robots are very good at learning to repeat an exact task through a process called behavioral cloning. But when something changes in the environment that the machine has not encountered before, it cannot adjust on the fly. The mistakes compound and the machine never recovers. If we expect one day to have AI agents that

can drive cars, wash the dishes, or do the laundry as well or better than humans do, we need different ways of teaching them.

As a student of computer science at Stanford with experience in robotic learning and generative modeling, Garg recognized that the next frontier for intelligent machines would involve building versatile agents that could learn to do complex tasks in ever-changing environments.

“What a human can learn in an hour, a robot would need 10 years,” he says. “I wanted to design an algorithm that could learn and transfer behavior as efficiently as humans.”

Imitation of an Expert

During an internship with machine learning researcher Ian Goodfellow at Apple, Garg had come to understand several key concepts that informed how scientists were training smarter agents:

- **Reinforcement Learning** (RL) methods enabled an agent to interact with an environment, but researchers had to include a reward signal for the robot to learn a policy, or desired action.

- A subfield of RL called **Q Learning** allowed the agent to start with a known reward and then learn what the Deep Learning community calls an energy-based model or Q-function. Borrowed from the field of statistical physics, a Q-function can find relationships within a small dataset and then generalize to a larger dataset that follows the same patterns. In this way, the Q-function can represent the intended policy for the robot to follow.

- A related approach known as **Imitation Learning** held promise because it empowered an agent to learn the policy from watching visual demonstrations of an expert (human) doing the task.

- **Inverse Reinforcement Learning** had been considered state-of-the-art for the past five years, because, in theory, it took Imitation Learning a step further. In this case, instead of trying to learn a policy, the agent’s goal is to figure out a reward that explains the human example. The catch here is that Inverse RL requires an adversarial reinforcement process — meaning the model must solve mathematically for two unknown variables: a reward and a policy. According to Garg, this process is difficult to stabilize and does not scale well to more complex situations.

With these concepts as the backdrop, Garg began thinking about how to achieve better results with a simpler approach to Imitation Learning. A nagging question began to keep him up at night: “What if you could solve for just one unknown variable instead of two?” If the two variables of reward and policy could be represented by a single, hidden Q-function, he reasoned, and if the agent learned this Q-function from watching human demonstrations, it could circumvent the need for problematic adversarial training.

Garg spent his winter break working out an algorithm and coding it. He was surprised when it worked the first time around. After one month of development, the algorithm was beating every other existing method on simple tasks and had proved to be exceptionally stable.

He recalls, “Professor Ermon looked at the results and said, ‘This is great, but why does it work?’ We didn’t know of any theory that could explain it, so I took on the challenge to write a mathematical framework that could prove the algorithm was optimal.”

Expert-Level Performance

Fast-forward to the summer of 2021, and this new method of inverse soft-Q learning (IQ-Learn for short) had achieved three- to seven-times better performance than previous methods of learning from humans. Garg and his collaborators first tested the agent’s abilities with several control-based video games — Acrobot, CartPole, and LunarLander. In each game, the agent reached expert-level performance faster than any other methods.

Next, they tested the model on several classic Atari games — Pong, Breakout, and Space Invaders — and discovered their innovation also scaled well in more complex gaming environments.

“We exceeded previous bests by 5x while requiring three times fewer environment steps, reaching close to expert performance,” Garg recalls. (An environment step refers to number of variations in the state that the agent introduced for the bot to reach this level of performance.)

The resulting scientific paper received a Spotlight designation going into the 2021 NeurIPS Conference. It was with this level of confidence and momentum that Garg proposed trying IQ-Learn in the MineRL challenge.

Success Without a Human in the Loop

To be sure, some of the “almost lifelike” tasks in Minecraft were difficult for Team Obsidian. At one point in the challenge, their AI bot accidentally built a skyscraper by tiling up fences. It also managed to cage a villager instead of an animal. But Garg is pleased with the results. Their AI bot learned to make walls, build columns, and mount torches successfully. The first-place team overall used 82,000 human labeled images to help recognize scenes in the game and spent about five months coding domain expertise for each task. By comparison, Garg and Mills earned their place without adding any domain knowledge to the model and with only three weeks to prepare.

“IQ-Learn is performing beyond our own expectations,” Garg says. “It’s a new paradigm for scaling intelligent machines that will be able to do everything from autonomous driving to helping provide health care.”

Someday, Garg imagines, we’ll be able to teach robots how to grasp objects in any situation simply by showing them videos of humans picking up objects or maybe even by responding to voice commands. If we want to train agents to perceive and act in a multidimensional world, we need to enable faster models that perform well, given limited data and time. Efficiency, it seems, is the determining factor in how useful robots will be in real life.

Stanford HAI's mission is to advance AI research, education, policy, and practice to improve the human condition. Learn more.

The 2022 Annual CARC / SARES Picnic - ARRL Field Day

By Ed Fong

Date : Saturday June 25, 2022 – starting at 2 PM - dinner is at 4PM

Where: Fairbrae Swim & Racquet Club
696 Sheraton Dr, Sunnyvale, CA 94087

Cost: Free to all CARC / SARES Members, family and friends

Raffle tickets: - $5 each or 3 tickets for $10

RSVP: edison_fong@hotmail.com

ARRL Field Day is coming up this year. It will take place Saturday June 25, 2022. Mark your calendars.

This year we have been very fortunate to have reserve the very exclusive Fairbrae Swim and Tennis Club in Sunnyvale, CA for our CARC and Sunnyvale Amateur Radio Emergency Service (SARES) 2022 ARRL Field Day.

This venue was brought back by popular demand having previously hosted CARC/SARES Field Day events. This is a beautiful well-maintained private facility in the heart of Silicon Valley with easy driving access and plenty of parking. It has a half Olympic size swimming pool, two full size tennis courts, large picnic area, industrial

kitchen, and full-size dining hall, clean restrooms, and showers for use of both members and guest.

We will have reserved the facility from 2 PM Saturday, June 25,2022 through Sunday for our CARC/SARES ARRL 2022 Field Day.

A **FREE** catered Chinese dinner will be served at 4 PM. Food will be catered by the China Wok Restaurant, 1211 S Mary Ave, Sunnyvale, CA 94087.

Menu - Fried Rice, lemon chicken, mixed vegetables, coconut fry shrimp, and Chinese chicken salad.

To alay concerns about COVID-19, dining will be mostly outside

The restaurant owner has promised a Chinese feast to be enjoyed by all. It would be appreciated that attendees bring a desert to share with our group. Optional cash donations or additional purchases of raffle tickets would be accepted to help defray the cost and go toward future club events.

Bring your entire family (extended family) and have a great day of socialization, great food, swimming, tennis, and of course HAM Radio.

Radios and antennas will be setup for HF and VHF the day before. Bring your own radio and feel free to plug it in and operate. This is a great opportunity to operate other radios and experience the look and feel of various manufacturers.

There will also be the traditional raffle, which will include but not limited to - laptop computer, quad band mobile radio, antennas, etc.

Raffle tickets are $5 each => 3 for $10

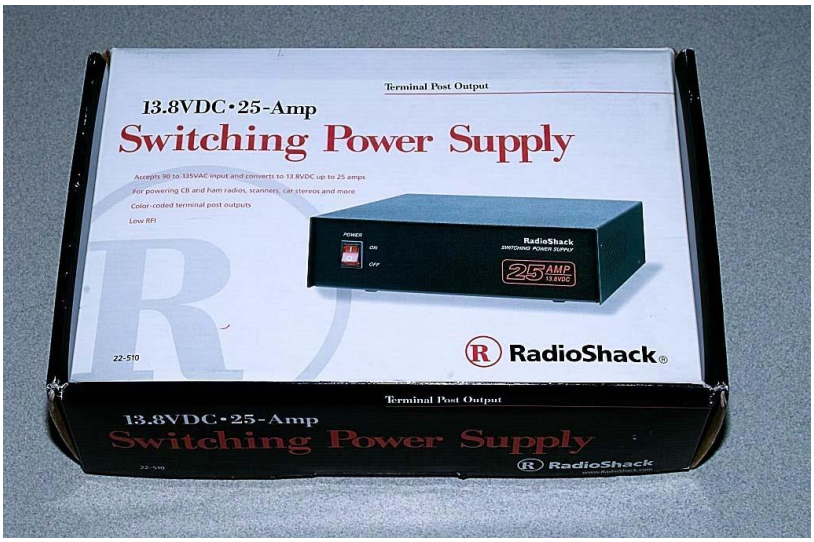
Pictures of the actual raffle are shown in the following:

HP – Chromebook - 14 inch display - 4GB RAM 32GM of eMMC

Radioddity QB25 (same as the QYT 7900SD) new Quad Mobile 25 watt transceiver.

This radio boast 200 memories, full software programmability, great bullet proof front end with 0.25 uV sensitivity, full FM broadcast radio, direct microphone key pad entry, absolutely the best color display out there and more.

If you have been looking to get on 220 MHz, this is the latest and greatest. You will be a proud owner of one of these radios.



Radio Shack - 25 AMP switcher for HF radios.

Tiny SA - 100KHz - 960 MHz spectrum analyzer full touch color display – resolution of 2.6KHz -640KHz. Built in calibrated signal general fro 0.1 MHz- 960 MHz.

NEW Nano VNA - 50KHz - 3000 MHz Full featured 2 – port VNA (network analyzer) - Test S11, S22, S21 and S12.

Tuned filters, duplexers, antennas. etc, just like the professionals.

Complete with calibration cables and calibration kit.

ATYME 32 inch HDTV

- 1366x768 resolution with 1200:1 contrast ratio. Display Size: 31.5" rear lit LED type. 60Hz refresh rate, 6.5 ms response time. This can also double as your computer monitor.

- Two HDMI connections, one USB connection, and Audio/Video connections

- Full feature remote

- 60Hz power capacity. Power consumption 42W, Standby 5W.

Baofeng UV5R x3 Tri-band handie talkie

Drop in LiOn smart charge, 1800 Mahr LiOn, battery, belt clip, antenna

Frequency coverage:

- 65-108 MHz – FM broadcast – receive only
- 136-174 MHZ – VHF – TX/RX
- 220-240 MHz TX/RX
- 420- 520 - MHz - TX/RX

Full CTSS and DCS coding

Power – 1/4 watt

I will have this radio preprogrammed to most of the Bay Area VHF 2 meter and 70cm repeaters. I will gladly add any free of charge to the winner.

Baofeng UV5R dual band handie talkie- I will have this radio preprogrammed to most of the Bay Area VHF 2 meter and 70cm repeaters.

I will gladly add any additional frequencies to the radio that the winner desires free of charge.

Canon PowerShot SD870 Digital camera - Excellent picture quality with 3.8X Optical zoom, 4X digital zoom.

Other features as follows:

- 8.0 megapixel resolution
- 3.7 in Width x 1 in Depth x 2.3 in Height
- 5.5 oz weight
- ISO 100, ISO 800, ISO 400, ISO 200, ISO 80, ISO 1600, ISO auto
- Focal Length Equivalent To 35mm Camera: 28mm – 105mm
- Auto focus throughout range of 28 - 105mm
- audio recording, usb 2.0 compatibility, digital noise reduction, dpof support, digital image rotation, camera orientation detection, pictbridge support, histogram display, ae lock, fe lock, resizing an image, in-camera red-eye fix, in-camera movie editing

It is a great handy shirt pocket point and shoot camera, it cannot get any easier to operate. You would be proud to own this convenient little camera.

2AH LiOn USB Backup pack - great to have, USB charging with solar backup - has a built in LED Flashlight. Complete with USB charging cable and compass.

Radioddity Emergency radio -

A professional level radio using 18650 0 Li-On battery with charger.

For off the grid operations, It has a solar panel for charging the battery and generator crank.

Excellent hi fidelity radio.

Victorinox Swiss Multi-function Army Knife – original, not some cheap knock off.

Mark your calendars – this is going to be fun!!!!

See below pictures of the exclusive and well maintained: Fairbrae Swim & Racquet Club in Sunnyvale, CA.

Fairbrae club front entrance

Picnic Area

Lap Pool Area

Children Play Area

Lounge Area

Overhead shot of Tennis courts and Swimming Pool