



TAHOE QUANTUM

no, you haven't heard of us yet. we are sort of in "stealth mode"

1. **About Will Araujo (@tahoe_quantum)**
2. **Tahoe Quantum – An Origin Story**
3. **Welcome – NLTFPD Fire Chief, Ryan Sommers!**
4. **Wildfire Challenge technical overview by Pranav Parakh (@pdparakh108)**
5. **Q&A and Next Steps**

About Will Araujo

Professional:

- Vice President, Autonomous Vehicle Development at Cruise (General Motors subsidiary)
 - Leading a 250 person multidisciplinary engineering team distributed across R&D sites and test facilities across the globe;
 - Directly manage 100MM+ annual engineering budget
 - Senior Leadership positions held include: Safety Council, Engineering Exec, Global Strategy & Operations
 - Technical and execution accountability for novel solutions to advance driverless vehicle technologies at scale
 - 100+ patents generated in my department
- Previously mgmt roles provided an opportunity to hone my leadership skills by building 100+ person teams in (3) orgs
- BA, University at Albany; MBA, Yale University

Personal:

- Originally from NYC; Moved to Lake Tahoe, Nevada 5 years ago with wife and now 6-month old daughter
- Supervisor / Board Member for Nevada Tahoe Conservation District (elected / term ends 2028)
- Early-stage technology investor in Robotics and Space



cruise

LUXE



Yale University



Work In Pictures



Honda To Deploy Cruise AVs In Japan

By **Jonathan Lopez**

January 20, 2021 11:02 am



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Honda just announced that it will leverage its development and commercial agreements with General Motors to deploy Cruise autonomous vehicles (AVs) as part of its up-and-coming autonomous vehicle mobility service (MaaS) businesses in Japan.

Tahoe Quantum – Timeline (draft)

April 2025 (Hackathon)

- **TODAY** – Sponsorship for Yale Quantum Hackathon.
- Partnership discussions with University of Nevada, Reno.

May 2025 (Planning)

- Evaluate hackathon outcomes and future research opportunities.
- Secure funding & partnerships.
- Plan September 2025 summit.
- Establish 2026 roadmap, fellowship plans, and initial industry partners.

Summer 2025

- Official Tahoe Quantum launch, with white paper and hackathon results.
- Local and industry press generated.
- Organization infrastructure development and possible initial hiring.

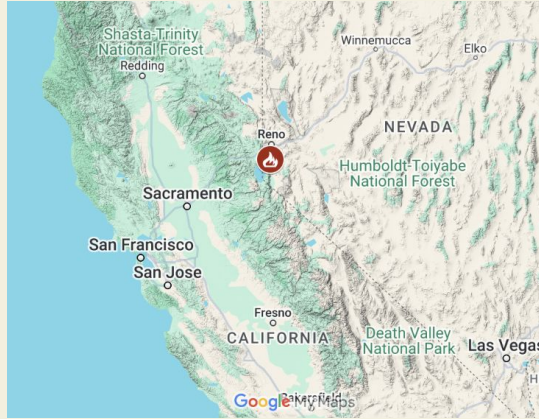
September 2025

- Inaugural Tahoe Summit in Lake Tahoe, Nevada.
- Showcase hackathon outcomes and future areas of focus.
- Establish Tahoe Quantum's industry presence.

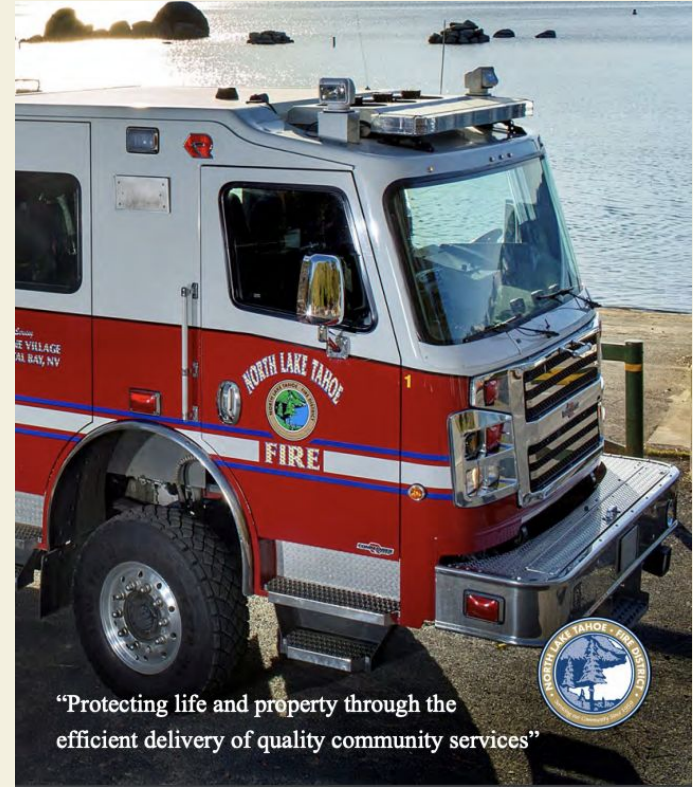
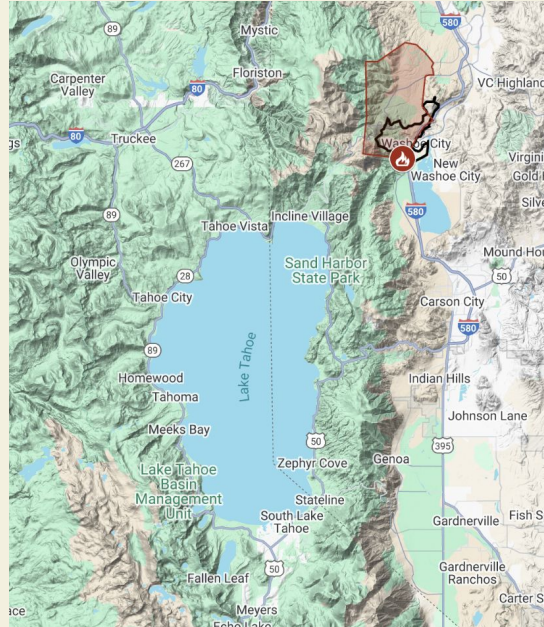


North Lake Tahoe Fire Protection District Fire Chief, Ryan Sommers

Where is Lake Tahoe?



2024 Davis Fire



Yale Hackathon – Wildfire Response



Challenge Overview

- Wildfires like the **2024 Davis Fire** spread unpredictably, forcing **fast decisions** on **evacuation routes, firefighting, and resource deployment**.
- Traditional emergency planning struggles with **real-time optimization under uncertainty** – bottlenecks lead to **delayed evacuations and inefficient fire response**.
- This hackathon challenges teams to **apply quantum computing** to solve this problem using a **multi-layer optimization approach**.



Challenge Statement

- Define a resource allocation problem, or a wildfire monitoring problem that a fire chief might face when dealing with an active wildfire.
- Reformulate your problem to be written in a Quadratic Unconstrained Binary Optimization (QUBO) structure that is well suited for running on quantum computers
- Use Quantum Annealing or the Quantum Approximate Optimization Algorithm (QAOA) to solve your problem!



How?

- We walk you through some of the basics that you need to learn about QUBO problems, Quantum Annealers, and QAOA
- Lots of resources linked at the bottom! Spend time at the start of the hackathon learning
- Creativity and initiative are paramount – the notebook is intended to be sparse, we want to give you space to innovate

Q&A and Next Steps

<https://github.com/TahoeQuantum/WildfireChallenge2025>

Discord:

- Will Araujo (@tahoe_quantum)
- Pranav Parakh (@pdparakh108)