HANS C. GUNDLACH

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Education

- Cambridge University, MASt Applied Mathematics, 2021-2022
- UC Berkeley, majors: Mathematics (3.8), Physics (3.9), Overall GPA: 3.8, 2017-2021,
  Graduated with General Distinction & Departmental Honors
  Thesis: "QAOA Makes the Cut: Investigating Quantum Max-Cut Solutions"
- Exchange student for two semesters at EPFL, Lausanne, Switzerland 2018-2019
- Lakeside High School, Seattle, 2013-2017

Projects/Work

- **Quantum Computing and Machine Learning Researcher and Paper Coauthor**
  - 2020 - 2021: Co-authored paper on machine learning for quantum protocol design accepted at MSML 2021 (paper link) . Completed honors thesis investigating new (counterdiabatic) methods for Max-Cut. Implemented and designed reinforcement learning algorithms in the ML platform TensorFlow to tackle problems in quantum circuit design as part of Professor L.Lin's group at UC Berkeley.
- **Pasto, Colombia AI Bike&Traffic-Recognition Engineer/AI-Workshop Leader**
  - 2019: Worked as engineer sponsored by Ingénieurs du Monde, to alleviate traffic and investigate safe bicycle lanes in Pasto, Colombia. Designed neural network traffic detection system using machine learning APIs for the specifications of the University of Nariño and the Transportation Bureau of Pasto. System was able to accurately recognize and count buses, taxis, and bicycles. Led 2-day workshop on deep learning at the University of Nariño.
- **Lakeside School Attendance System Entrepreneur and Developer**
  - 2017: Initiated, implemented, and sold automatic Wifi attendance system after identifying problem with previous slow manual sign in system. I built the system using Java, JFrame, SwingWorker, and SMB. I worked with the administration to design the UI to their specifications. Lakeside High School bought the system and it is currently in use keeping highly-accurate attendance information on 600+ students.
- **Seattle Mini-Maker Fair Virtual Reality Exhibit**
  - 2016: Designed and co-developed VR maze game for Android using Unity and automatic mesh generation libraries. App was selected for VR exhibit at Seattle Mini-Maker Fair.
- **Bioinformatics Research Intern at Fred Hutchinson Cancer Research Center**
  - Summer 2016 and 2017: Researched and implemented quantitative metrics to understand the evolution of pre-cancerous (meta-plastic) tissue and built visualisation system using R.
- **Language Learning Software Development**
  - 2015: Initiated and implemented web Latin conjugation tester to help my Latin classroom with test prep using HTML/CSS, PHP, and jQuery. Website helped over 1500 unique students during May 2015.

Achievements and Activities

- Overall winner of Global Hacks 2020 for CovidAccountable, a chrome extension that highlights US-COVID funding.
- Selected for voice lesson scholarship sponsored by the UC Berkeley University Chorus.
- Art (link) selected for (2016) 20 under 20 exhibit at Bellevue Art Museum
- Writer for Berkeley's satirical magazine *The Heuristic Squelch*.