SUMMER Q-CAMP 2020: INTRO TO QUANTUM SESSIONS

1. **Overview**
    a. *Book:*
        i. *The Theoretical Minimum: What You Need to Know to Start Doing Physics Vol.2* by Leonard Susskind and Art Friedman
            1. Pdf here: https://github.com/markf94/QML_Thesis/blob/master/Books_and_Resources/Quantum%20Mechanics%20-%20The%20Theoretical%20Minimum.pdf
        ii. *Quantum Computing: A Gentle Introduction* by Eleanor Rieffel and Wolfgang Polak
            1. http://mmrc.amss.cas.cn/tlb/201702/W020170224608150244118.pdf
        iii. Qiskit Textbook
            1. https://qiskit.org/textbook/ch-states/introduction.html
        iv. Feynman Lectures: Quantum
            1. https://www.feynmanlectures.caltech.edu/III_01.html
        v. Popular Science
            1. https://www.amazon.com/Quantum-Physics-Beginners-Mind-Blowing-Understand-ebook/dp/B089LZCBL1
            2. https://www.amazon.com/What-Real-Unfinished-Meaning-Quantum-ebook/dp/B073P4GBPD/ref=sr_1_1?crid=XRRSLA1YY7D9&dchild=1&keywords=adam+becker+what+is+real&qid=1595194572&s=digital-text&sprefix=adam+becker+%2Cdigital-text%2C153&sr=1-1
    b. Video Lectures:
        i. Quantum mechanics
            1. Leonard Susskind lectures through Stanford University
            2. https://www.youtube.com/watch?v=iJfw6lDlTuA&list=PL701CD168D02FF56F&index=2&t=0s
        ii. Linear Algebra
            1. Video series from 3Blue1Brown “The essence of linear algebra”
            2. https://www.youtube.com/playlist?list=PLZHQObOWTQDPD3MizzM2xVFitgF8hE_ab
    c. Weeks
        i. Week 1-2: Linear Algebra Introduction
            1. Vectors
            2. Vector spaces
            3. Operators
            4. Eigenvalues & Eigenvectors
        ii. Week 3-5: Basics of QM
            1. Stern-Gerlach

2. Photon Polarization
3. Measurement
4. Operators
5. Postulates

iii. Week 7: Qubits and Quantum Information

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