

# Jonas Bar-on

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## **Education and Relevant Technical Course Work:**

University of California Berkeley, Mechanical Engineering Class of 2024 (GPA 3.93/4.00)

Computer Programming (MATLAB and Python), Linear Algebra and Differential Equations, Advanced Linear Algebra, Statics, Advanced Dynamics, Material Science, Electronics, Signals and Systems, Linear and Nonlinear Controls, Three-Dimensional Modeling for Design (SOLIDWORKS and AutoCAD)

Loyola Marymount University, 2019-2020 (GPA 4.00/4.00)

Calculus I, Calculus II, and Multivariable Calculus

El Segundo High School, Class of 2020 (GPA 4.67/4.00)

## **Relevant Work History:**

Raytheon Technologies, Mechanical Engineering Intern 05/2022-08/2023

Projects:

- ❖ Application of Kalman Filtering to Attitude Estimation: Developed algorithms for noise filtering and prediction of attitude quaternions determined by a payload star tracking system. Investigated regressive sub-filtering, dirty derivatives, and noise covariance estimation techniques to reduce mean error for off-nadir pointing. Results were able to reduce errors by up to 70%.
- ❖ Kinematic Modeling of Elliptical Space Vehicle Orbits using Simulink: Developed a model that propagates an orbit based upon a set of input Kepler parameters or propagates an orbit using an inverse Kepler method on an input set of measured data. The model outputs angular rates and coordinate frame transformations between, ECEF, ECI, body frame, and payload frame.
- ❖ Simulink Attitude Control System: Developed foundational architecture for a model to control line of sight vectors for constellations of space vehicles where each vehicle could have a different pointing command (nadir, celestial, intersatellite, custom). The model had the capability to propagate custom orbits by utilizing the previous kinematic method.

## **Extracurricular/Work Experience:**

Lifeguard Position: 06/2021-Present at UC Berkeley Aquatics and Redondo Beach Seaside Lagoon  
Pool lifeguard certified in first aid, AED, CPR, and oxygen administration.

Cal Triathlon Social, Recruitment, and Community Development Chair: 08/2021-Present

Team member competing in Sprint, Olympic distance, and Half Ironman distance races. Board member responsible for organizing team events and recruiting athletes.

## **Awards:**

National Merit Scholar (2020), Academic All-American (2017-2020), AP Scholar with Distinction (2020)