

# Govind Chari

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## EDUCATION

### UNIV. OF WASHINGTON

PHD IN CONTROLS

Advisor: Behçet Açıkmese  
May 2026 | Seattle, WA

### CORNELL UNIV.

BS IN MECHE

GPA: 4.18 (1/103)

May 2022 | Ithaca, NY

## LINKS

LinkedIn:// govindchari

Github:// govindchari

Website:// govindchari.com

## COURSEWORK

Advanced Astrodynamics (g)

Stochastic Controls (g)

Reinforcement Learning (g)

Nonlinear Controls (g)

Network Optimization (g)

Model-Based Estimation (g)

Linear Systems (g)

Feedback Controls (g)

Numerical Analysis (g)

Spaceflight Mechanics

Probability and Inference

(g) indicates graduate coursework

## SKILLS

### SOFTWARE

C++ • Julia • Python

Matlab • ANSYS •

Solidworks (CSWA Cert)

HSMWorks

## HOBBIES

Tennis • Badminton

Stargazing • Hiking

Weightlifting

## EXPERIENCE

### UNIV. OF WASHINGTON | RESEARCH ASSISTANT

Sept 2022 - Present | Seattle, WA

- Writing high-speed conic optimizer for real-time quadrotor path-planning
- Researching novel first-order optimization algorithms for model predictive control

### SPACEX | ASSOCIATE GNC ENGINEER

Jun 2022 - Aug 2022 | Hawthorne, CA

- Ran Monte-Carlo simulations and analysis to assess the impact of altering thruster configuration on Dragon's entry performance
- Prototyped new thrust allocation scheme
- Added state machine branch for debris avoidance maneuvers
- Built verification tool to ensure positive propellant margin in all two fault propulsion cases

### SPACEX | PROPULSION ANALYSIS INTERN

Jun 2021 - Aug 2021 | Hawthorne, CA

- Performed nonlinear structural and thermal analysis of Raptor and Merlin engines components using ANSYS and documented results for the responsible engineers
- Assessed multiple fluid fitting designs to mitigate flight risk for Starship orbital test flight
- Analyzed deflections in Raptor fuel turbopump housing at critical sealing surfaces
- Assessed gapping, structural margins, and fatigue life on Raptor high pressure lines
- Conducted modal and random vibration analysis on high pressure Merlin LOx line

### CORNELL SPACE SYSTEMS DESIGN STUDIO | GNC ENGINEER

April 2021 - May 2022 | Ithaca, NY

- Worked on the development of a high fidelity 6DOF simulation for PAN
- Tuned orbital rendezvous controller and worked on flight software implementation
- Conducted HITL and HOOTL tests to verify performance of orbital rendezvous controller and propulsion system
- Ran simulations to determine if deployment dispersions met our satellite's delta-v budget

## PERSONAL PROJECTS

### CONVEX SOLVERS | JAN 2022

- Wrote a primal-dual interior point solver for convex quadratic programs in C++ based on Mehrotra's predictor-corrector
- Wrote an Augmented Lagrangian solver for convex quadratic programs in Julia
- Wrote unit tests, set up CI pipeline, and code coverage using Github Actions

### G-FOLD IMPLEMENTATION | MARCH 2021-JUNE 2021

- Recreated Acikemese and Blackmore's powered descent algorithm
- Utilized lossless convexification and modified problem to help with feasibility
- Coded algorithm and a 6DOF simulation in C++ to verify robustness to disturbances
- Conducted Monte-Carlo trials to determine landing ellipse of the algorithm

### VERTICAL TAKEOFF AND LANDING VEHICLE | APRIL 2020-AUGUST 2020

- Built and coded a vertical takeoff and landing vehicle powered by racing drone motors which utilizes servo driven thrust vectoring fins for attitude control
- Wrote GNC code from scratch using C++ including a Kalman Filter to fuse altimeter and accelerometer readings which reduced variance in altitude readings by 44%
- Designed and printed thrust test stand to accurately model the nonlinear thrust curve of racing drone motors and to measure the effectiveness of the thrust vectoring fins
- Conducted isolated unit tests to validate efficacy of the roll controller