ANDREW CHEN

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EDUCATION

CARNEGIE MELLON UNIVERSITY — New York, NY
M.S. Computational Finance (expected) — Aug. 2023 - Dec. 2024

PURDUE UNIVERSITY — West Lafayette, IN
B.S. Aeronautical & Astronautical Engineering (***GPA:*** 3.75/4.00) — Aug. 2019 - May 2023
- ***Coursework:*** honors multivariate calculus, probability & statistics, ODEs/PDEs, linear systems theory, control systems analysis, nonlinear/convex optimization, distributed autonomy & control
- ***Honors:*** Dean's List & Semester Honors (all semesters)

EXPERIENCE

SKYDIO — Redwood City, CA
Drone Autonomy Intern — May 2021 - Aug. 2021
- Designed real-time sensor drift estimator using >10TB of historical data, enabling a long-range landing pad search method that reduced vehicle loss rate by ~50%
- Developed 3D collision detection for in-house simulator using signed distance fields [*C++/Python*]

DRAPER LABORATORY — Cambridge, MA
Flight Software Intern — Oct. 2020 - Jan. 2021
- Wrote parallelized anomaly detection tools for 2TB of simulated launch and reentry telemetry, using Monte Carlo parameter sweeps, exponential moving average, and running variance
- Designed module to validate data against 6DOF flight dynamics simulation [*MATLAB/Simulink*]

NASA - LANGLEY RESEARCH CENTER — Hampton, VA
Rapid Prototyping Intern — May 2019 - Aug. 2019
- Designed custom liquid-cooled 3D printer to prototype 50+ CubeSat parts
- Developed telemetry visualizer for Orion Ascent Abort-2 rocket launch [*Java*]

PROJECTS

Bitcoin/Lightning Pathfinding REU *(UNC Charlotte)* — Apr. 2023 - Aug. 2023
- Developing nonconvex optimization methods to improve payment reliability on Lightning Network (based on iteratively reweighted least squares)

Bitcoin/Lightning Pathfinding Semester Project *(Purdue University)* — Aug. 2022 - Dec. 2022
- Implemented linearized Pickhardt payments on snapshot of Lightning network; increased speed & reliability by >3x for payments over ~$10k (min-cost flows) [*Python*]

Propulsive Landing Guidance — Apr. 2020 - Sep. 2020
- Implemented JPL/SpaceX's rocket landing guidance in 6DOF flight simulator (convex optimization, lossless convexification, optimal control) [*C/Python*]

HONORS/AWARDS

Purdue New Venture Challenge, 2023: second place out of 20 (Bitcoin/LN point-of-sale)
Northrop Grumman AAE 251 Award: best-in-class sophomore design project
NASA App Dev. Challenge, 2019: winning team out of 34 in the U.S.
PhysicsBowl Competition, 2018: top 1% out of 7200+ worldwide