

JAKOBI DAVIS

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SUMMARY

Cornell civil engineer, FE certified, working in energy systems modeling and storage economics. Extended an eleven-zone AMPL capacity expansion model of the New York grid to test how carbon pricing moves the resource mix, and produced economic analyses of utility-scale battery storage in ERCOT and CAISO. Seeking an entry-level energy analyst or energy systems engineering role. Open to relocation, preference for Texas and the West Coast.

EDUCATION

Cornell University, Ithaca, NY

May 2025

B.S. Civil Engineering, Minor in Sustainable Energy Systems

Dean's List | McMullen & Ryan Scholar | Graduating Class Speaker, College of Engineering | Peer Mentor of the Year

Relevant coursework: Applied Modeling in Renewable Energy, Renewable Energy Systems, Energy Economics, Energy Technology and Subsurface Resources, Uncertainty Analysis in Engineering, Engineering Smart Cities. Completed four graduate-level courses as an undergraduate.

LICENSES AND CERTIFICATIONS

Fundamentals of Engineering (FE), Civil — NCEES, November 2025

AI Fluency: Framework and Foundations — Anthropic, June 2026 | Claude 101 — Anthropic, June 2026

TECHNICAL SKILLS

Modeling and analysis: AMPL, MATLAB, Python, Excel, linear and mixed-integer optimization, model predictive control, sensitivity and uncertainty analysis

Domain: Capacity expansion planning, levelized cost of storage, carbon pricing policy, energy storage economics, electricity market structure (ERCOT, CAISO, NYISO)

Other: AutoCAD, Autodesk Inventor, web development, technical writing

ENGINEERING PROJECTS

Capacity Expansion Under Carbon Penalties, NYISO — Senior Capstone (CEE 4880)

Spring 2025

- Extended an eleven-zone NYISO capacity expansion model in AMPL across solar, wind, gas, four-hour batteries, and existing nuclear, adding a carbon tax term to the objective function with an EIA-sourced emissions conversion factor.
- Iterated the carbon tax in \$5 per tonne steps and found \$55 per tonne reaches New York's 70 percent renewable target, raising system cost 15 percent, roughly \$100 per customer per year.
- Derived consumer price impact from the dual of the power balance constraint, and ran a plus or minus 30 percent availability sensitivity against NREL seasonal data: a poor resource year yields only 56 percent at \$55 per tonne, and holding 70 percent implies roughly \$120 per tonne.
- Identified transmission bottlenecks at upstate to downstate interfaces, and concluded that carbon pricing works on the average year and fails in the tail, requiring a diversified policy portfolio.

Utility-Scale Battery Storage Economics, ERCOT and CAISO — CEE 5200

2025

- Computed a levelized cost of storage of \$166.79 per MWh for the DeCordova facility in Granbury, Texas, and traced the gap against market benchmarks to non-modular design and early-stage maturity rather than regulation.
- Benchmarked against Moss Landing in CAISO to test whether centralized versus decentralized market design changes the economics, and assessed ERCOT market rules and Inflation Reduction Act incentives.

Pumped Storage for Wind Intermittency, Chicago — CEE 4800

2025

- Paired an autoregressive wind forecasting model with model predictive control to optimize pumping rate, release rate, and storage capacity, cutting unmet demand by up to 51 percent against wind-only.

Solar-Driven Vertical Farming, Manila — CEE 4210, five-person team

2024

- Designed a photovoltaic-integrated hydroponic pilot for a dense tropical urban site, modeling crop yield, resource efficiency, and economic feasibility at a levelized cost of energy of \$0.0528 per kWh.

EXPERIENCE

FE Exam Preparation Instructor, Ivy Scholars Tutoring — Atlanta, GA

2025 – Present

- Teach weekly one-on-one FE preparation in engineering economics, mechanics of materials, statistics, and construction.

Founder and CEO, Champion's Voice LLC — Atlanta, GA

Sep 2023 – Present

- Grew an education brand for student-athletes to an audience of 40,000, wrote and self-published a 123-page book, and designed and built championsvoice.org end to end including payment processing and email automation.

Keynote Speaker and Workshop Facilitator — Self-Employed

2021 – Present

- Interviewed will.i.am on STEAM education at InstructureCon 2021 and gave the closing remarks to 20,000 attendees.

ATHLETICS

Cornell Varsity Baseball: four-year starter, two-year captain, career strikeout record holder. Played professionally with the New Jersey Jackals (Frontier League) and State College Spikes (MLB Draft League).