

DATA SCIENCE INTERN

LINEAGE LOGISTICS

1. BACKGROUND

Lineage Logistics is the second largest cold storage network in the world, playing a critical role in multiple global supply chains. We store and transport temperature-sensitive commodities (about 40 billion lbs per year) in a large network of warehouses, trucks and rail cars. Our inventories include everything from Boeing's carbon fiber to your 4th of July baby-back ribs.

We seek students in Mathematics, Statistics, Computer Science, Engineering and Physics as Data Science Interns. Materially every aspect of our business relates to graph theory, convex/combinatorial optimization or thermo-fluid dynamics, giving experience in a broad spectrum of academic disciplines. In addition, Data Scientist Interns will gain industrial experience, seeing first-hand how a business operates and makes decisions.

Interns will work out of our data science office in San Francisco, California.

2. PROBLEMS

Your work will influence everything from the design of our facilities to how we operate them to where we ship product. The following is a sampling of problems we encounter:

- (1) Routing freight over the minimum cost (or minimum time) path (using graph theory)
- (2) Optimally packing items in a warehouse or truck (using combinatorial optimization and integer programming)
- (3) Analyzing and predicting the failure modes of industrial refrigeration systems (using survival analysis, harmonic analysis and an array of industrial sensors)
- (4) Predict how long product will stay in a warehouse once it has arrived (using neural networks, support vector machines or other statistical methods)
- (5) Solving scheduling problems with many moving pieces (using linear programming)
- (6) Simulating a warehouse to understand how to best utilize robotics (using agent-based models and Monte-Carlo simulation)

(7) Visualizing high-dimensional data sets (using D3.js, R, Python, MATLAB, etc)

For a preview of the kind of data we have, see: <http://analytics.lineagelogistics.com>

3. EXPECTATIONS

Applicants must be enrolled at Duke University and possess in-depth training in Mathematics, Statistics, Computer Science, Engineering (preferably EE or ME) or Physics. To be successful, students will need some programming ability in some combination of MATLAB, R, Python or a similar scientific computing packages. Databasing experience is a plus given the large volumes of data associated with problems we encounter.

The role requires a high degree of logical thinking and analysis. You must be self-motivated, detail-oriented and possess exceptional problem-solving skills. We view non-technical work or extracurricular experience as a plus, as it suggests an ability to communicate with a non-technical audience.

Please include a resume, cover letter and transcript with all applications.

4. REMNUERATION

Data Science Interns will receive \$25/hour for 8 weeks, for a total stipend of \$8,000. We also provide housing in San Francisco.

5. CONTACT INFORMATION

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