19 June 2020

Cask NX, LLC.

Recruiter,

My name is Colton Grainger; I am a math Ph.D. student on leave from the University of Colorado at Boulder, having worked over the last year in the Data Engineering and Curation Section at the National Center for Atmospheric Research. My professional interests include wrangling messy data, modeling complex systems, and prototyping solutions to ambiguous problems.

In the wake of COVID-19, and because I want to contribute technical expertise to my community and hometown, Boise, I have decided to pivot in my career trajectory to take an **Internship** at Cask beginning Summer 2020, rather than returning to graduate school on a teaching assistantship in the Fall.

My immediate qualifications to work on a software engineering team at Cask include

1. over three years of scientific computing experience in various **programming, scripting, and query languages**;
2. a year of professional **data engineering** experience at the National Center for Atmospheric Research; and
3. background in **mathematics and data science** that drives me to produce quality code and documentation.

For example, at NCAR, I worked independently under two project scientists on the reduction of meteorological data from binary image files using Python and SQLAlchemy. Starting from scratch, I designed a metadata schema and ingest system for a ~60 TB collection of scanned images to reduce each ~6 MB image to ~2 KB of meteorological time-series metadata, and I developed this workflow to completion over a year.

What I look forwards to contributing to an engineering team at Cask is (i) communicating openly, frequently, and enthusiastically with my peers and supervisors; (ii) authoring bullet-proof functional / object-oriented code; and (iii) collaborating in an agile fashion to progress on technical projects at a mind-numbing speed.

As a Boise native making an early career transition from pure mathematics towards software engineering, I want to emphasize that I have intense desire to learn and improve professionally in both the short term (~3 months) and long term (~5 years). Hence, I am committed to rapidly assimilating necessary domain knowledge if hired at Cask.

A selection of the technical areas I have *fluency* in is: applied mathematics (numerical analysis, statistics), web development (apache, nginx, pandoc, yst), scripting (bash, Perl), version control (git), Unix-like OS's (Debian, Ubuntu, macOS), tabular data (Excel, pandas), cluster/cloud computing (AWS, gcloud, Spark), relational databases (MongoDB, MySQL, NoSQL, PostgreSQL), and python3 (scipy, numpy, pandas, SQLAlchemy, unittest). I have *intermediate familiarity* with Java, C dialects, and Windows.

Thank you for your consideration,

Colton Grainger