25 May 2020

Clearwater Analytics

Recruiter,

My name is Colton Grainger, I am a second year Ph.D. student in mathematics at CU Boulder, and I have just finished a one-year student visitor position in the Data Engineering and Curation Section at the National Center for Atmospheric Research. In light of COVID-19, and, because I want to contribute to a community of creative individuals in my hometown, Boise, I intend to pivot in my career trajectory to take an **Client Services Analyst** position at Clearwater Analytics beginning Summer 2020, rather than returning to graduate school in the Fall.

My immediate qualifications to work at Clearwater Analytics include

1. a year of professional **data engineering** experience at the National Center for Atmospheric Research; and
2. background in **mathematics and data science** that would support me to understand and answer complex investment accounting and analytics questions posed by Clearwater's clients.

**While I am well-equipped to do quantitative analyses, I am new to investment accounting as a domain-specific application of financial mathematics.[1] However, to remedy this, I have an "intense desire to learn and improve".**

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 documents to reduce each ~6 MB image to about ~2 KB of (meteorological time-series) metadata, and I developed this workflow to completion over a year.

Analogous tasks I am confident to perform in an investment accounting, analytics and reporting setting would be (i) collaborating directly with stakeholders to gather requirements, (ii) managing client inquiries and delivering accurate analytics, (iii) ingesting and processing[2] financial time-series data, and (iv) administering a SQL database.

**Doing mathematics, I learned how to have problem-solving conversations with myself and others; doing data science, I learned additionally how to describe and implement a solution in its domain-specific language.**

For example, I am confident that I could (i) quickly assimilate necessary domain knowledge of accounting principles, investments, and securities; (ii) proactively investigate and solve technical issues arising from questions posed by clients; and (iii) design well-documented and reproducible analyses tailored to the needs of my supervisors.

**To be explicit**. A subset of the technical tools I am confident using looks like: `apache`, `bash`, `git`, `debian`, `Excel`, `gcloud`, `pickle`, `MongoDB`, `MySQL`, `nginx`, `numpy`, `pandas`, `PostgreSQL`, `python3`, `scipy`, `statistics`, `SQLAlchemy`, and `unittest`. I would need to "book up", but I could also quickly be proficient in: GAAP, SAP, Amazon Web Services, `Java`, or `C`.

Thank you for your consideration,

Colton Grainger

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[1]What I know about *analysis as a mathematical discipline* is due to Walter Rudin (1987) and Gerald Folland (1999). To this effect, I am *formally interested* in stochastic processes, especially the modeling of meteorological time-series.

[2]While I prefer open source tools, I am flexible to use software that meets the needs of my team. I have over 5 years' experience using Excel *in a professional setting*, up to the point of having to teach students in my statistics class at CU Boulder how to use the software.