In pursuing his degree, Mr. Zou has taken the following relevant coursework: **Statistical Analysis, Mathematical Statistics, Applied Categorical Data Analysis, Modern Applied Statistics, Bayesian Applied Decision Theory, Recent Development in Bayesian Analysis, Statistical and Econometric Methods, and Microeconomics.**

This coursework has prepared Mr. Zou for the Data Scientist position in the following ways:

* **Statistical Analysis:**
* **Mathematical Statistics:**
* **Applied Categorical Data Analysis:**
* **Modern Applied Statistics:**
* **Bayesian Applied Decision Theory:**
* **Recent Development in Bayesian Analysis:**
* **Statistical and Econometric Methods:**
* **Microeconomics:**

Credit, PayPal credit, fraud detection, marketing, collections, sales, product, customer lifetime management, customer service

Business intelligence, complex quantitative data mining solutions,

Complex, high-volume, high dimensionality data, including online fraud relational data

risk management model and application platform

>> Building payment fraud detection model with large amount of data  
>> Participating in initial prototyping and implementing of payment network for high capacity and low latency query  
>> Data analysis to understand fraud pattern and model efficiency   
>> Performance analysis of large scale real time data platform and decision engine

Modeling and data analysis: developed end to end (classification and regression) models to rank order and segment customers into different risk groups

Data pipeline: Clean up and prepare massive data for modeling;  
Feature engineering and selection.

Transaction fraud/stolen bank/stolen credit card detection, risk modeling

Transactional data & anomaly detection

User behavior

Account profile

The account engine determines target accounts from profile groups based on behavioral data.

algorithms mine data from the customer’s purchasing history—in addition to reviewing patterns of likely fraud stored in its databases—and can tell whether, for example, the suspect transactions were innocent actions of a globe-hopping pilot.

<https://blogs.wsj.com/riskandcompliance/2015/06/18/how-paypal-manages-fraud-risk/>

The digital payment processor, which split from eBay Inc. in July, uses a combination of technology and human expertise to identify and stop potential fraud in real-time, during online transactions.

The system tags the account for review by human experts, she said. “They might discover that the IP addresses are at airports and this guy is a pilot,” she said. Once verified, that intelligence is fed back into PayPal’s systems. Humans don’t make the system faster, but they make real-time decisions as a check against, and supplement to, the algorithms, she said.