earnest

A data science internship

August 14, 2014
(censored for public view)

Predictive Algorithms

Build our models to predict applicant quality

- Primary motivations: 1) scalability, 2) improved decisions over hundreds of variables, 3) prioritizing applicants

Data Integration and Preprocessing

- Gather and merge important features from both Mongo collections and Postgres tables
- Make note of missing data, and how we should account for this while making predictions

Predictive Algorithms

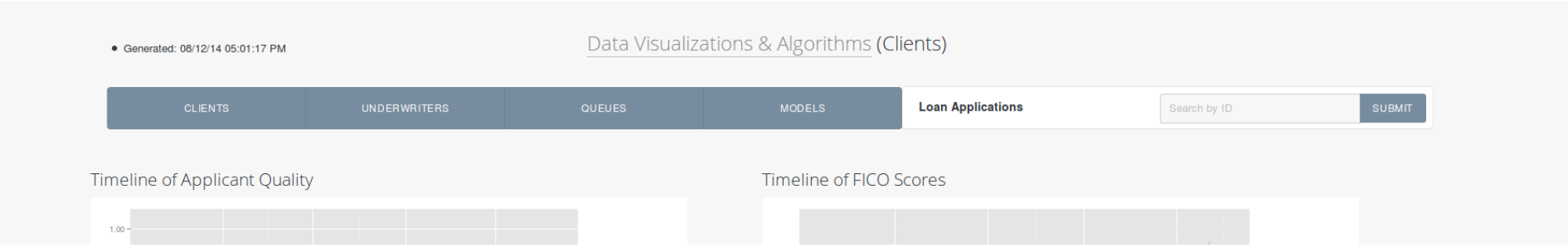
Modeling

- Apply random forest on data, and regularize parameters
- Take advantage of random forest's in/out-of-bag

Inference and Priority Roadmap

- Analyze our results, and decide on what should be improved next before more optimization

Data Science Website



Infrastructure

- Build the framework from scratch
- Build webpages for clients, underwriters, queues, models, loans, and—soon to be deployed—weekly reports
- Automate the website updates with cron

Visuals

- Deliberate on useful, easily accessible visualizations
- (More suggestions on metrics are welcome!)

Mining Financial Transactions

- Find trends among our clients' spending habits
- Find most important keywords in distinguishing applicant quality
- Selectively refine the list of keywords and their underlying relationships

Collaborations

Marketing

- Data munging
- Reporting
- Consulting
- Potential blog post on all the intern's experiences/value?

Underwriting and Risk

- Important considerations for future modelling purposes
- Priority order for underwriting queue (pending implementation?)
- Automated decision-making
- Weekly reporting

Understanding our Competitors

Confidential!

- Web Scraping & Parsing
- Analyze common trends among their clients, and their volume of clients over time
- Examine their pricing model for different interest rates

For Future Data Scientists

- Coding Conventions
- Documentation
- File Management
- Finalize use cases for data science tools

There's more work to be done!

- More variables
- Data science website
- Predict decline reasons
- Predict variance in underwriter scores
- Fraud detection
- Unit testing (docker :])