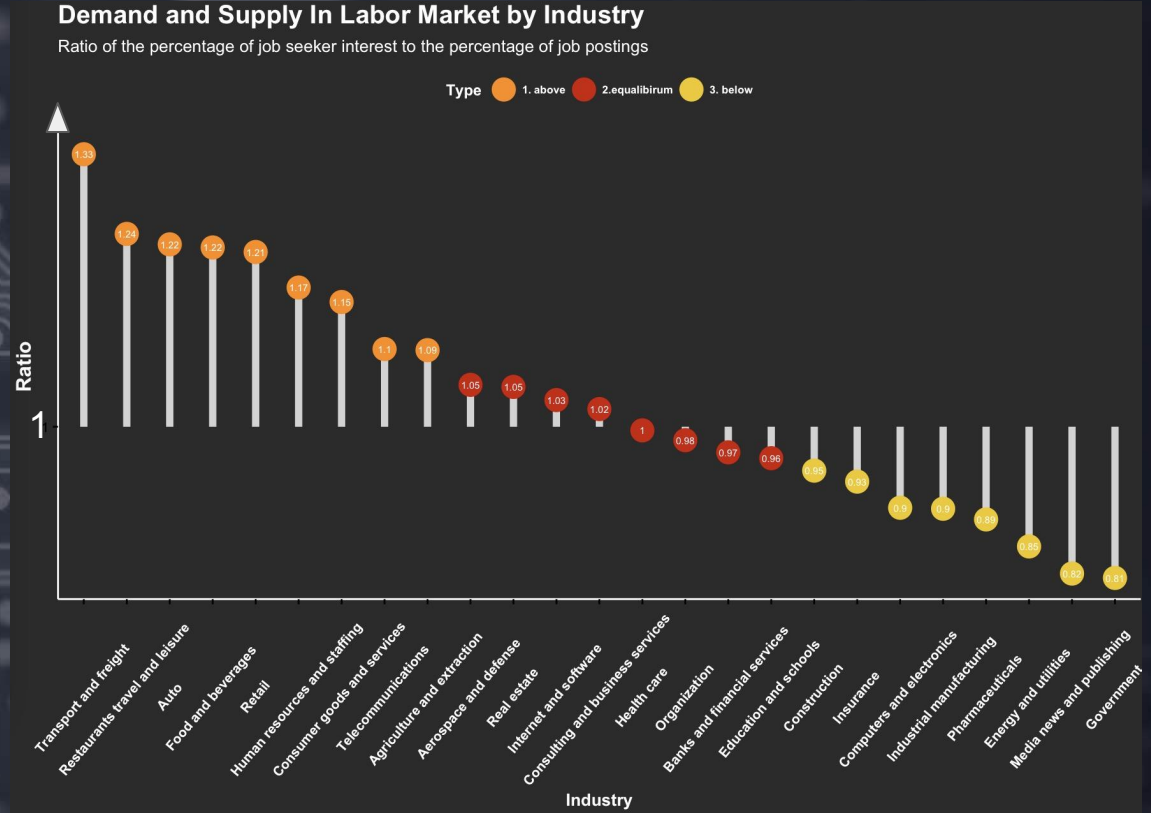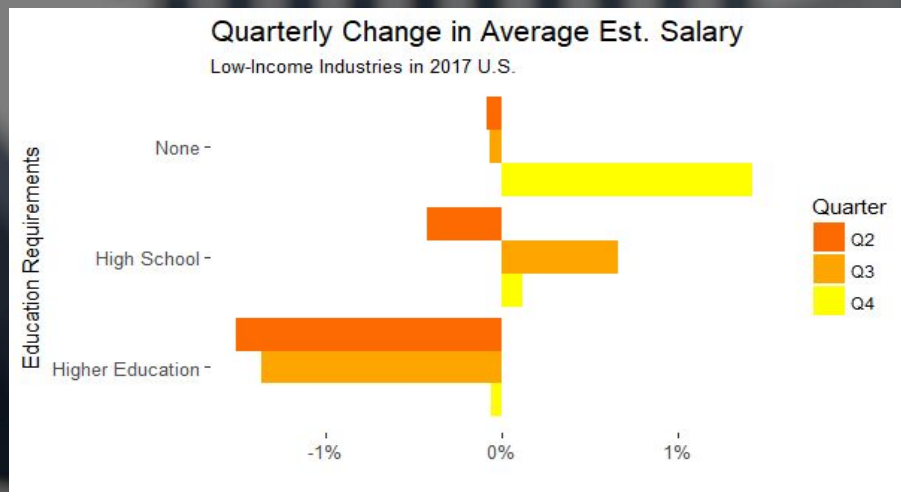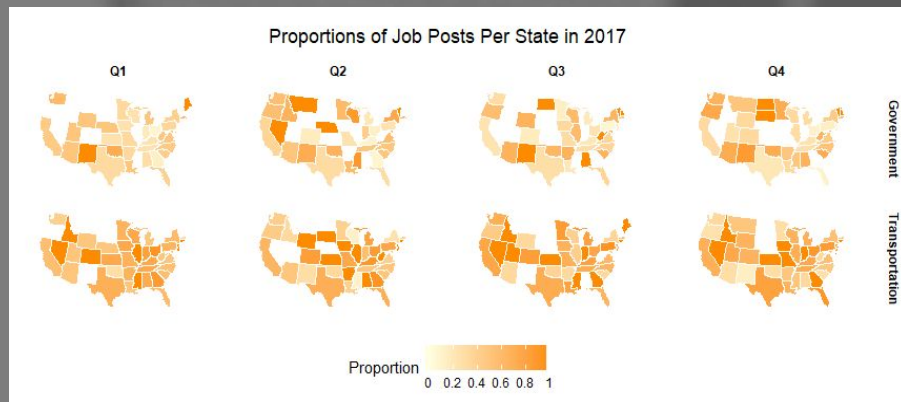# The Secret of Job Hunting

TEAM UMVUE

Tianying Feng, Duyun Tan, Yaner He, Yuhe Gao, Zheng Wang

Ranking the Industries - Prediction

- Prediction of the Industry a company belongs to

- Analyzing a training set to get the pattern of the jobs offered by companies from different industries

- Bayesian approach to estimate likelihood of a company belonging to an industry

- Completing other missing values for companies with existing Industry record

- Overall accuracy of ~50% using cross validation VS. random guess of ~4%

Demand and Supply In Labor Market by Industry
Ratio of the percentage of job seeker interest to the percentage of job postings

Type ● 1. above ● 2.equalibirum ● 3. below

Ratio / Industry

Values: 1.33, 1.24, 1.22, 1.22, 1.21, 1.17, 1.15, 1.1, 1.09, 1.05, 1.05, 1.03, 1.02, 1, 0.98, 0.97, 0.96, 0.95, 0.93, 0.9, 0.9, 0.89, 0.85, 0.82, 0.81

Industries: Transport and freight, Restaurants travel and leisure, Auto, Food and beverages, Retail, Human resources and staffing, Consumer goods and services, Telecommunications, Agriculture and extraction, Aerospace and defense, Real estate, Internet and software, Consulting and business services, Health care, Organization, Banks and financial services, Education and schools, Construction, Insurance, Computers and electronics, Industrial manufacturing, Pharmaceuticals, Energy and utilities, Media news and publishing, Government

Temporal Patterns - Further Investigation

Proportions of Job Posts Per State in 2017

Quarterly Change in Average Est. Salary
Low-Income Industries in 2017 U.S.

- Further investigation of temporal job posting patterns

- According to 2017 reports by BLS and other external resources, 2017 was a "better-than-usual year for low-wage workers"
  - Low-income cut-off = 80% of median estimated salary (standards derived from information on *Vox* and *U.S. Department of Housing and Urban Development*)

- Given results obtained from our Bayesian model, we further examined the temporal patterns for industries Government (highest ratio) and Transportation (lowest ratio)