

Predictions of future industrial growth and employment demand

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Introduction

Goal: Predict future industrial growth and employment demand for job hunters and business plan makers

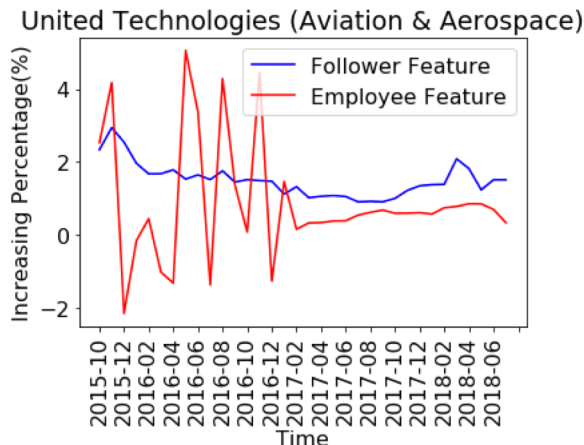
Data source: LinkedIn profiles (~1GB)

Steps:

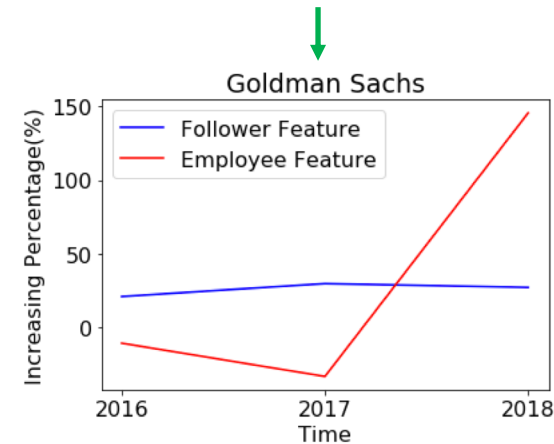
1. Feature Extraction

- Time-dependent increasing rates of followers
- Time-dependent increasing rates of employees
- The industry each company belongs to

• Example:

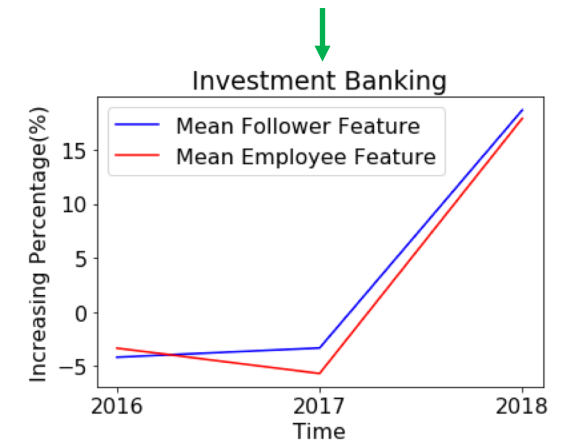


2. Clustering of companies vs. Clustering of industries



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Proportions of industries
in each growth trend?



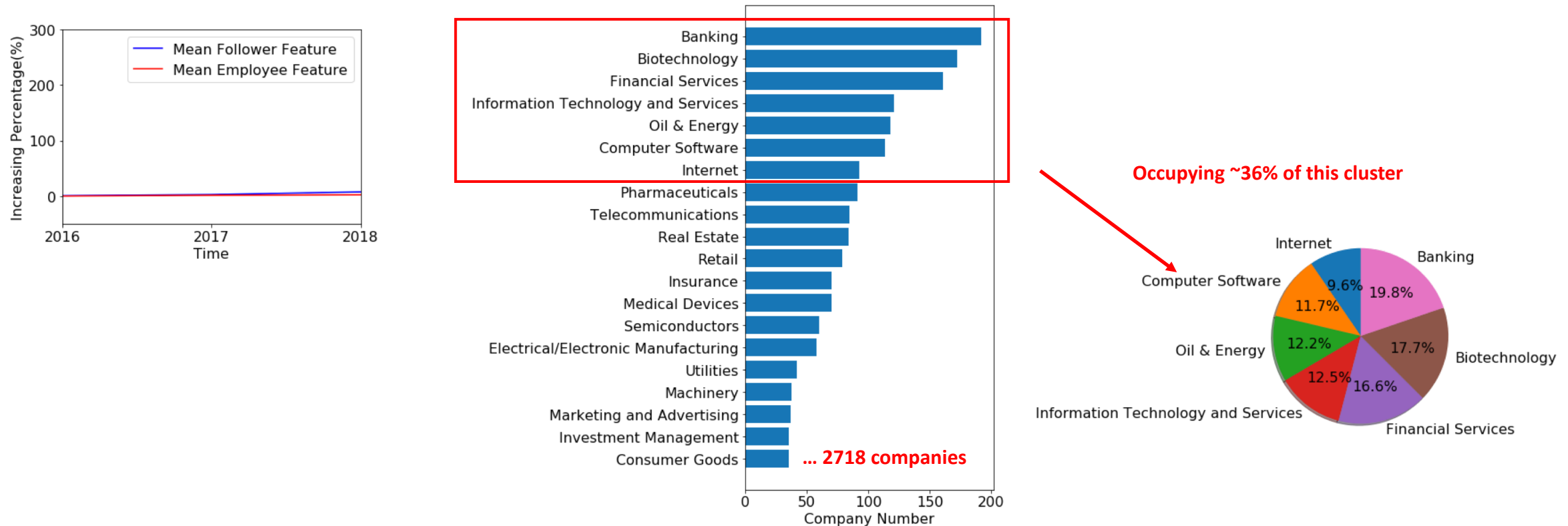
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Similar growth trends
of different industries?

3. Classify a given company to a specific industry -> Predict its future growth & employment demand

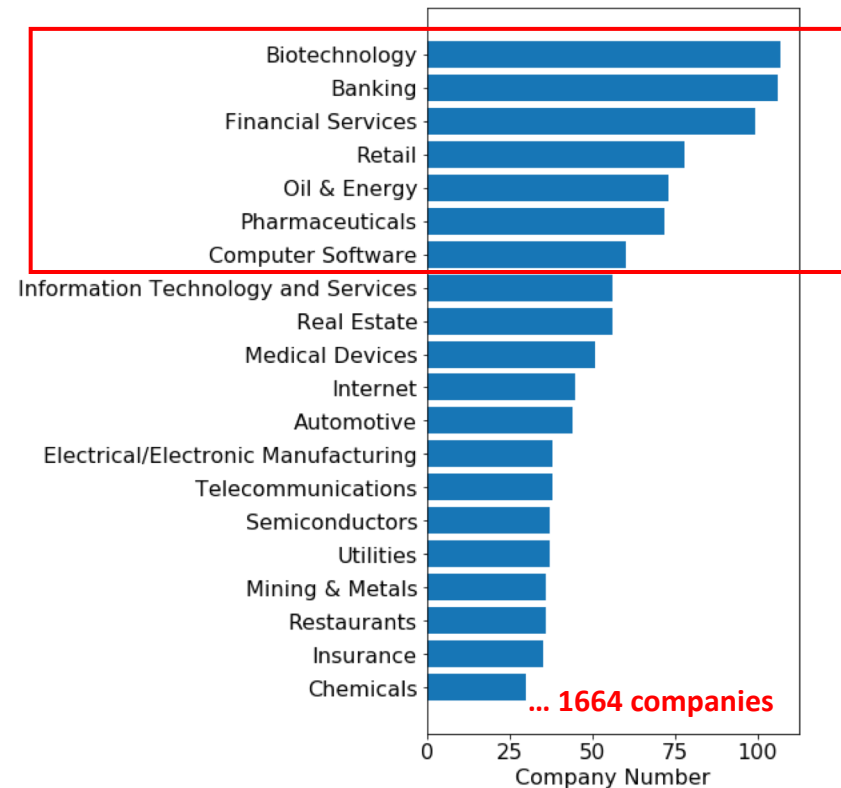
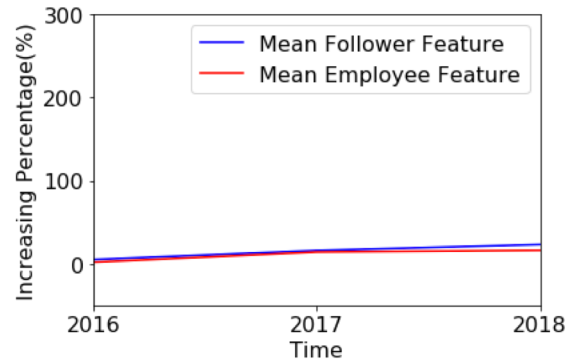
Clustering of companies

Cluster 1: 2718 companies have a flat growth

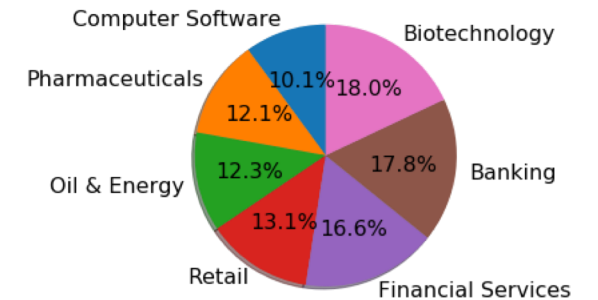


Clustering of companies

Cluster 2: 1664 companies have a slightly accelerated growth

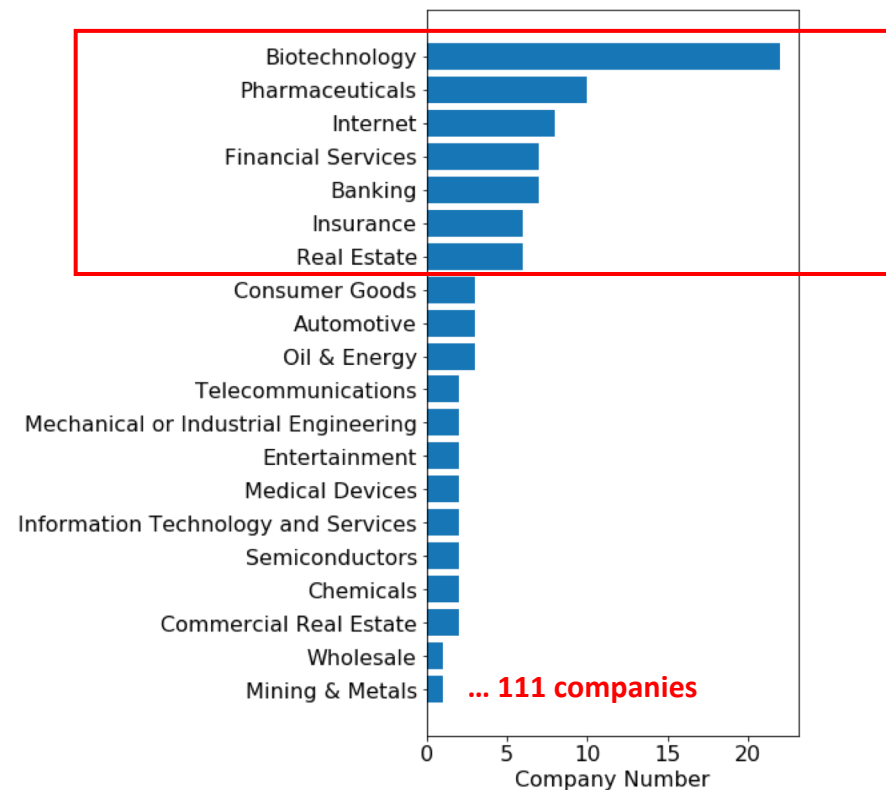
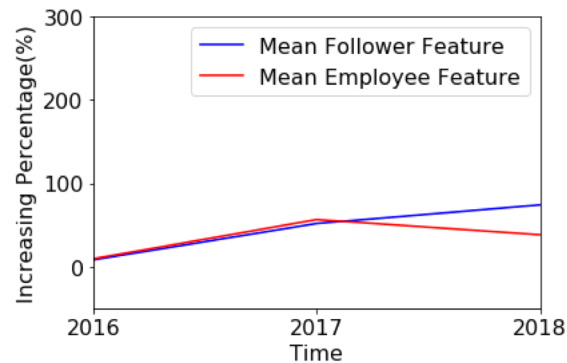


Occupying ~ 36% of this cluster

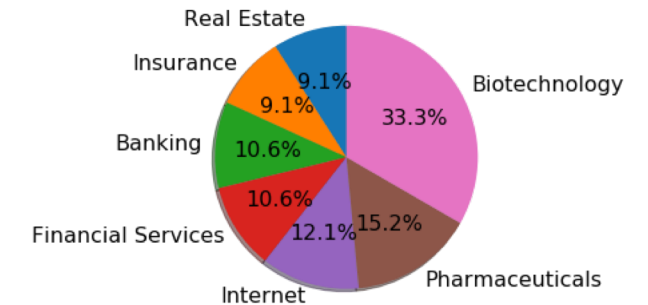


Clustering of companies

Cluster 3: 111 companies have an accelerated growth in follower numbers, but a decreasing growth in employee numbers



Occupying ~ 60% of this cluster



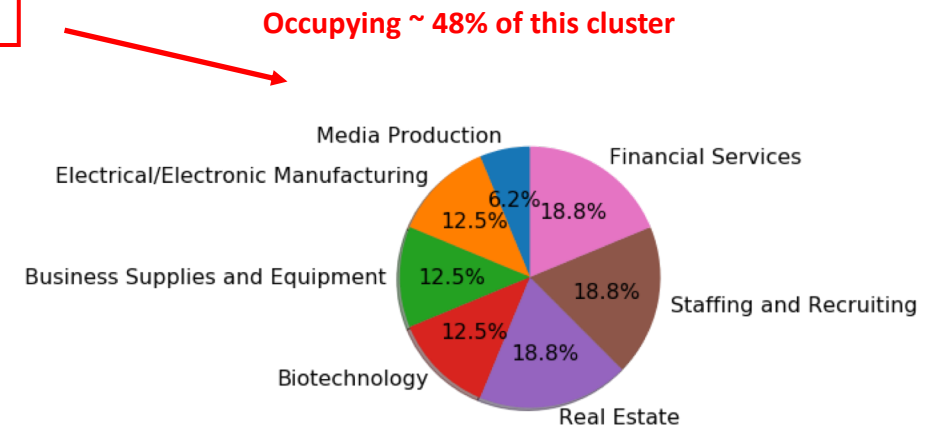
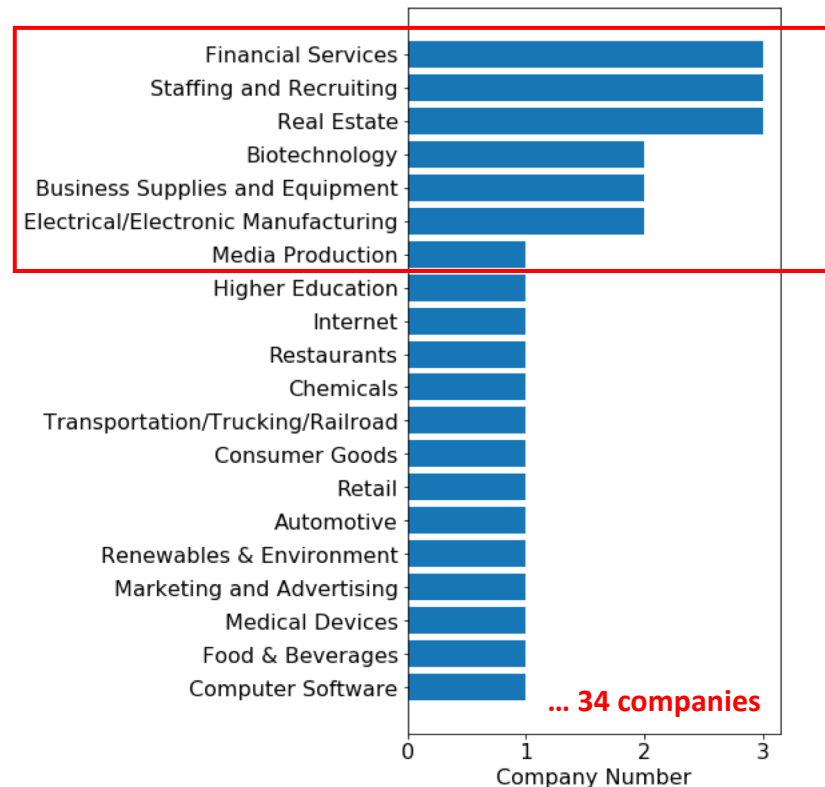
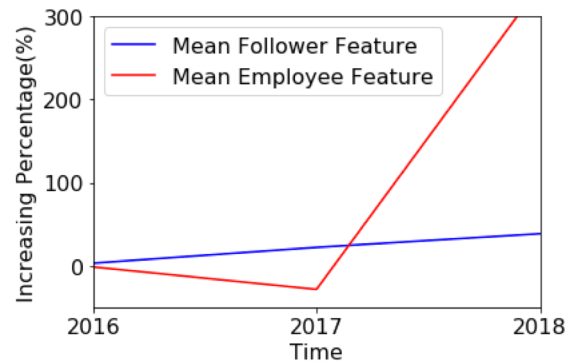
Clustering of companies

Cluster 4: 126 companies have a slightly accelerated growth in follower numbers, but a significantly accelerated growth in employee numbers



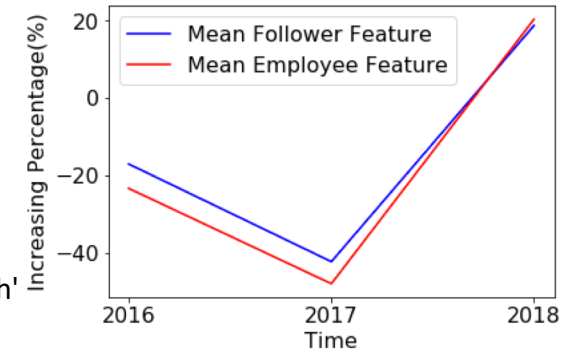
Clustering of companies

Cluster 5: 34 companies have an accelerated growth in follower numbers, but a much more significant accelerated growth in employee numbers

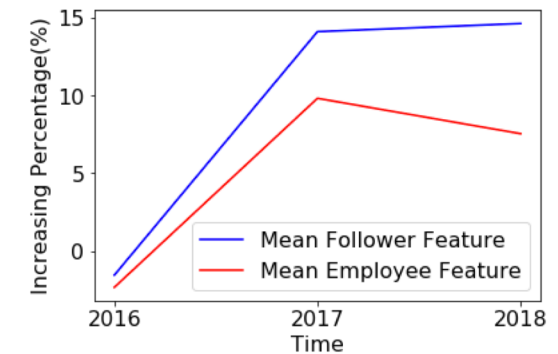


Clustering of industries

'Accounting' 'Airlines/Aviation' 'Apparel & Fashion' 'Automotive' 'Aviation & Aerospace' 'Banking' 'Biotechnology' 'Broadcast Media' 'Business Supplies and Equipment' 'Chemicals' 'Civil Engineering' 'Commercial Real Estate' 'Computer Hardware' 'Computer Networking' 'Computer Software' 'Construction' 'Consumer Electronics' 'Consumer Goods' 'Cosmetics' 'Defense & Space' 'Education Management' 'Electrical/Electronic Manufacturing' 'Entertainment' 'Environmental Services' 'Facilities Services' 'Financial Services' 'Food & Beverages' 'Glass, Ceramics & Concrete' 'Health, Wellness and Fitness' 'Hospital & Health Care' 'Human Resources' 'Individual & Family Services' 'Industrial Automation' 'Information Services' 'Information Technology and Services' 'Insurance' 'Internet' 'Investment Banking' 'Luxury Goods & Jewelry' 'Machinery' 'Management Consulting' 'Marketing and Advertising' 'Mechanical or Industrial Engineering' 'Media Production' 'Medical Devices' 'Mining & Metals' 'Nanotechnology' 'Newspapers' 'Oil & Energy' 'Packaging and Containers' 'Paper & Forest Products' 'Pharmaceuticals' 'Plastics' 'Publishing' 'Research' 'Retail' 'Semiconductors' 'Sporting Goods' 'Sports' 'Staffing and Recruiting' 'Telecommunications' 'Textiles' 'Tobacco' 'Utilities' 'Wholesale' 'Wireless'

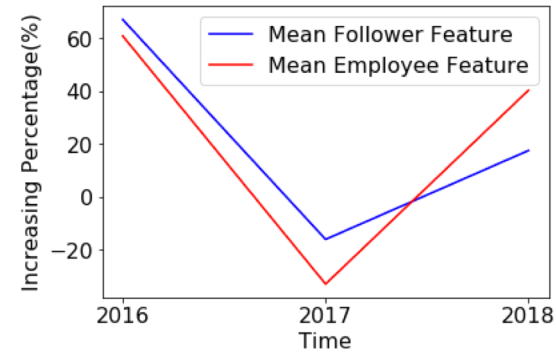


'Apparel & Fashion' 'Aviation & Aerospace' 'Capital Markets' 'Computer & Network Security' 'Computer & Network Security' 'Computer Games' 'Dairy' 'Defense & Space' 'Design' 'E-Learning' 'Events Services' 'Executive Office' 'Fine Art' 'Food & Beverages' 'Furniture' 'Gambling & Casinos' 'Government Administration' 'Graphic Design' 'Higher Education' 'Hospital & Health Care' 'International Trade and Development' 'Law Enforcement' 'Law Practice' 'Legal Services' 'Leisure, Travel & Tourism' 'Leisure, Travel & Tourism' 'Logistics and Supply Chain' 'Luxury Goods & Jewelry' 'Maritime' 'Medical Practice' 'Military' 'Mining & Metals' 'Music' 'Nonprofit Organization Management' 'Oil & Energy' 'Outsourcing/Offshoring' 'Photography' 'Printing' 'Professional Training & Coaching' 'Professional Training & Coaching' 'Program Development' 'Public Relations and Communications' 'Public Safety' 'Railroad Manufacture' 'Ranching' 'Real Estate' 'Recreational Facilities and Services' 'Renewables & Environment' 'Restaurants' 'Shipbuilding' 'Supermarkets' 'Venture Capital & Private Equity' 'Venture Capital & Private Equity' 'Veterinary' 'Warehousing' 'Wine and Spirits' 'Writing and Editing'

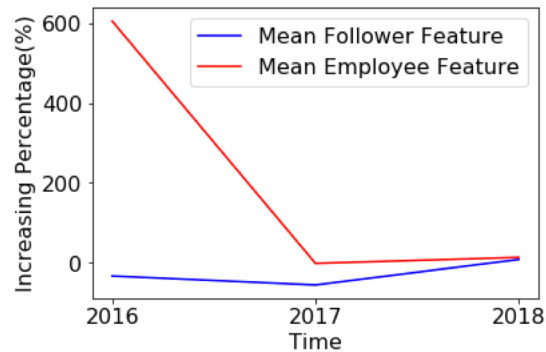


Clustering of industries

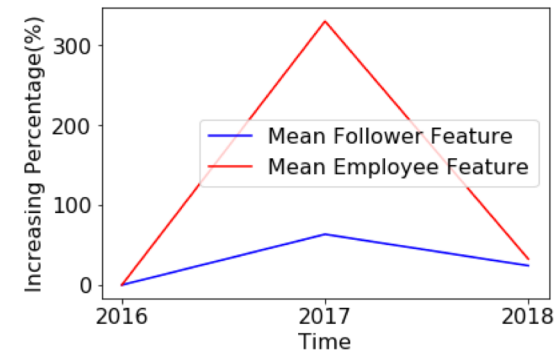
'Building Materials', 'Consumer Services',
'Food Production', 'Hospitality'
'Online Media', 'Package/Freight
Delivery', 'Paper & Forest Products'
'Renewables & Environment',
'Security and Investigations',
'Transportation/Trucking/Railroad'



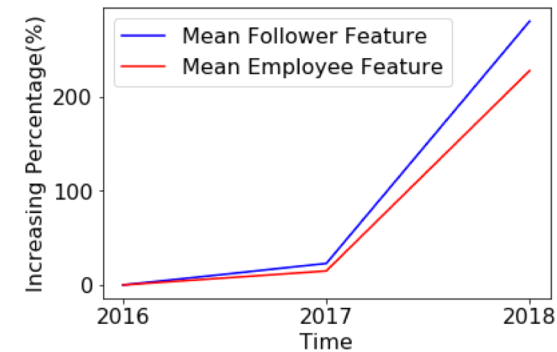
Investment Management



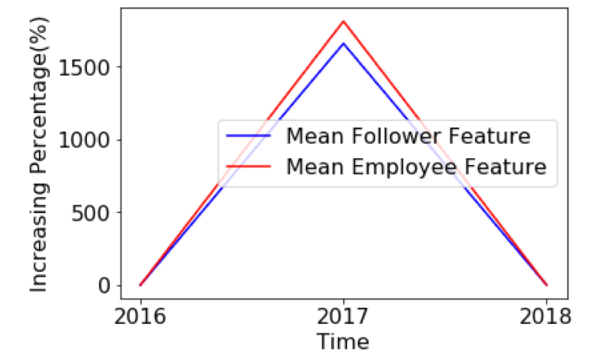
Motion Pictures and Film



Farming



Gambling & Casinos



Histograms of companies from different industries

