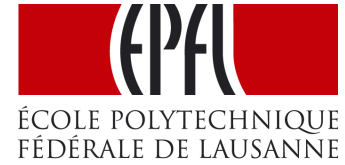


# Speaking Swiss: Languages and Venues in Foursquare

Darshan Santani and Daniel Gatica-Perez  
 Idiap Research Institute and EPFL Lausanne  
 {dsantani, gatica}@idiap.ch



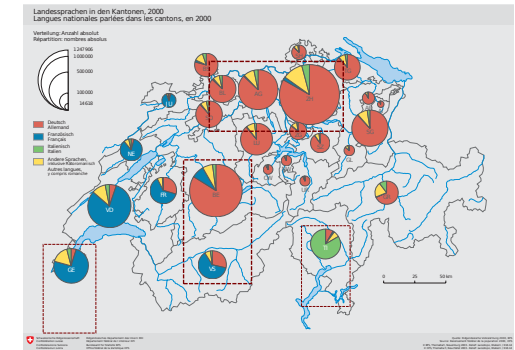
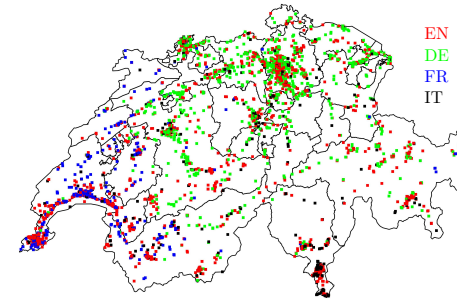
## Research Objectives

1. Examine multiculturalism through the lens of language use in Switzerland.
2. Compare basic patterns of language usage across cantons with traditional census data.
3. Extract basic content trends via topic models.



## Spatial Distribution of Language Usage

Relative rankings of marginally spoken languages in different cantons, as per national census, completely matches with Foursquare



Each dot denotes a comment, with color depicting its language. Language border is visible across different language-speaking cantons.

Relative popularity of national languages across all cantons in Switzerland as per 2000 census, along with the comparison with our dataset.

## Foursquare

3 billion checkins, 30 million users



Tips

User Profile

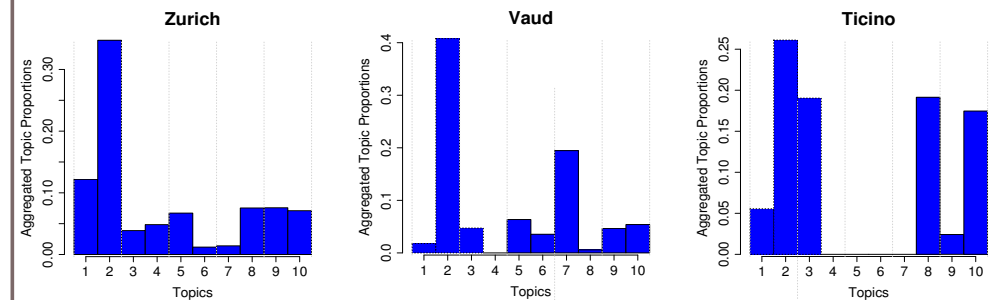
## Data Summary

21,780 comments – 8,748 users – 53 languages

Language Used	% of Total Comments	% of Users
English (EN)	58.22	61.28
German (DE)	21.91	20.52
French (FR)	10.68	9.28
Italian (IT)	3.41	3.64

## Topical Analysis

Spatial distribution of topics captures region's multicultural idiosyncrasies



### Topic 1 - Transport

airport train swiss ticket hour  
 don't zurich security class chf wi  
 fi area long buy shop switzerland  
 shopping expensive

### Topic 7 - Fast Food

burger hamburgers de drink  
 forget fries chips kind generous  
 dont cheese owners backpacker  
 hostel pub guinness romandie

### Topic 3 - Italian Cuisine

pizza italian pizzas pasta pie  
 tiramisu shopping pretty terrible  
 restaurant chocolate vis al store  
 bernerbhof made special gnocchi

## Users Multilingualism

Clear evidence of multilingualism with English as the dominant language of choice

Languages Used	1	2	3	4
% of Users	81.0%	14.77%	3.05%	0.83%
% of Places	72.0%	21.71%	5.00%	0.98%
Language Pairs	EN-DE	EN-FR	EN-IT	DE-FR
% of Bilingual Users	42.57%	18.89%	8.36%	1.32%

## Venues and Languages

Language use across cantons, with the official language for each canton shown in brackets

Canton	EN	DE	FR	IT
Zurich (DE)	63.20%	28.67%	1.26%	1.71%
Geneva (FR)	71.74%	1.09%	19.31%	1.80%
Bern (DE)	53.74%	36.21%	2.86%	38 1.87%
Vaud (FR)	49.06%	1.19%	41.59%	44 1.93%
Ticino (IT)	50.79%	6.08%	2.02%	35.92%