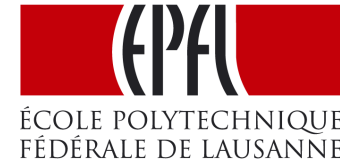


# Speaking Swiss: Languages and Venues in Foursquare



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



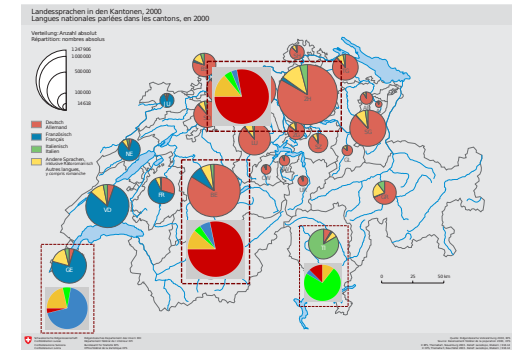
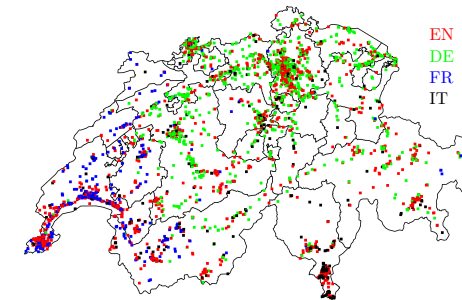
## Research Objectives

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

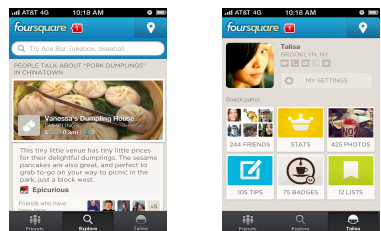


Each dot denotes a comment, with color depicting its language. Language border is visible across different language-speaking cantons.

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

## 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%

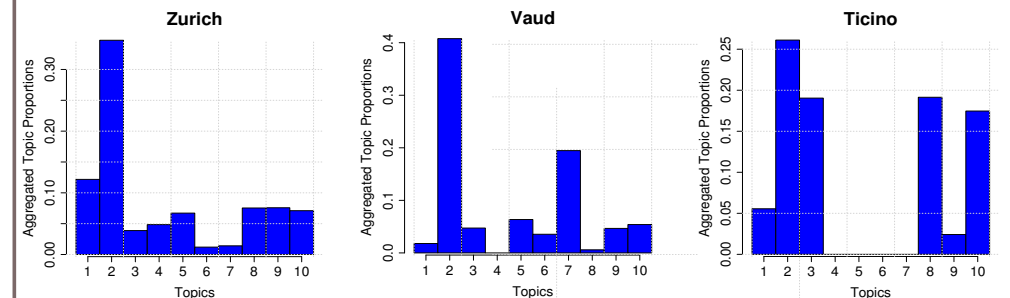
## Venues and Languages

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%

## 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  
bernerhof made special gnocchi