



# Hack Integration

Hackathons – Bringing high-skill refugees and jobs together through diverse hackathon teams



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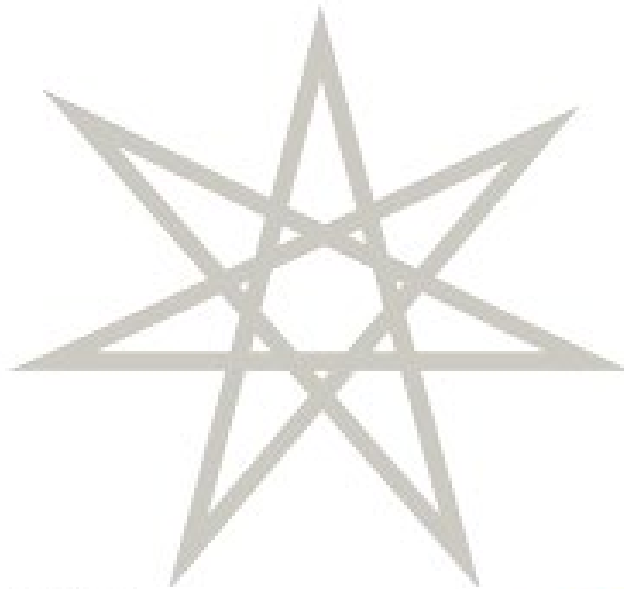
# Project Partners



Schweizerische Eidgenossenschaft  
Confédération suisse  
Confederazione Svizzera  
Confederaziun svizra

Eidgenössisches Justiz- und Polizeidepartement EJPD  
Staatssekretariat für Migration SEM

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# Project Overview

## High-Skill Labor Market Integration

- ▶ Problem
  - ▶ High-skill refugees, low-skill jobs
  - ▶ Discrimination against foreign training
- ▶ Solution
  - ▶ *Show* one's skills
  - ▶ *Learn* about the job market
  - ▶ *Networking* in one's field
- ▶ Test
  - ▶ Change in networks, employment/income

## Teams and Inclusion/Diversity

- ▶ Problem
  - ▶ Self-assigned teams unbalanced (size & skill)
  - ▶ Algorithms ignore preferences → unravelling
- ▶ Solution
  - ▶ *Deferred acceptance* suggestion
  - ▶ *Individual* preferences, skills
  - ▶ *Team* size, skill needs
- ▶ Test:
  - ▶ Team *performance, inclusion, satisfaction*

# Project Overview

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<p><b>Beruflicher Werdegang</b></p>	

- ▶ **Wrong** skin color
- ▶ **Wrong** last name
- ▶ **Wrong** place of training/experience
- ▶ **Wrong** citizenship/visa



- ▶ **Competent**
- ▶ **Creative**
- ▶ **Hard-working**
- ▶ **Congenial**

# Hackathons—Bringing high-skill refugees and jobs together through diverse hackathon teams!

On this page, you can:

- 1. Register for the study. You will then be emailed a link where you can provide further information (proof of hackathon registration and bank details) to receive cash compensation of 20 CHF.
- 2. Sign the informed consent agreement which allows us to use your data in this study.

## 1. Registration and Compensation

The collected information will be anonymized and used only for research purposes. See the individual [consent agreement](#).

### Choose the Hackathon(s) you want to attend

Where

Filter by location ▼

Topics / Skills

Filter by topics/skills ▼

Language

Filter by language ▼

clear all

Event Name	When	Where	Topics / Skills	Language	Website	Further information
<input type="checkbox"/> HackaHealth Zurich	08.11.2024 - 10.11.2024	Zurich	data, professional skills, design, software, all interested, business	DE, EN	<a href="#">Website</a>	▼



# Project Overview, Self-sorting teams

hack4socialgood.ch

- ▶ 2-person team and then a 14-person team!
- ▶ Teams with no programmer, other teams with no social worker!
- ▶ Some choice, but also some happenstance—2 team-assigned colleagues loved their teams!



# Project Overview, VersusVirus Team Algorithm

- ▶ Empty 10-person teams.
- ▶ Randomly select individuals, test if relevant skill, assign if so, repeat.
- ▶ Leftover people seed a new team based on topic of interest. Repeat above

10% unsolicited feedback about poor team building process

*Less than disappointing it was a real mess and contribute to the fact that the process was so complex to find the matching team to one challenge ...*

*The team matching process was a bit kafkaesque, we lost a whole day to figure out who was on the team.*

*Many were assigned to teams that didn't match their interests or/and skills. The whole Friday people were trying to form teams*

*The given team was not motivated for the given challenges, then to build another team, decide for a new or given challenge in the education area*

# Project Overview, Matching (in Economics)

- When
  - No price-based market
  - Centralized clearing house
  - Clear preferences
- Applications
  - Organ donor-recipient
  - Medical resident-hospital
  - Students-dorms
  - Students-high schools (NYC)

\*[Nobel prize 2012](#)



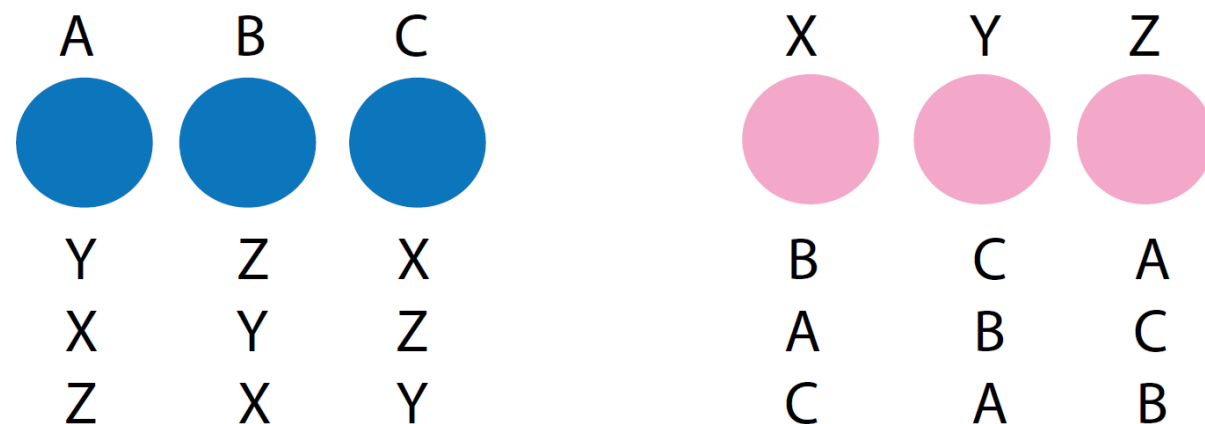
**In Iran you can sell a kidney!**

Poor and uneducated more likely to sell  
Older patients more likely to buy ...



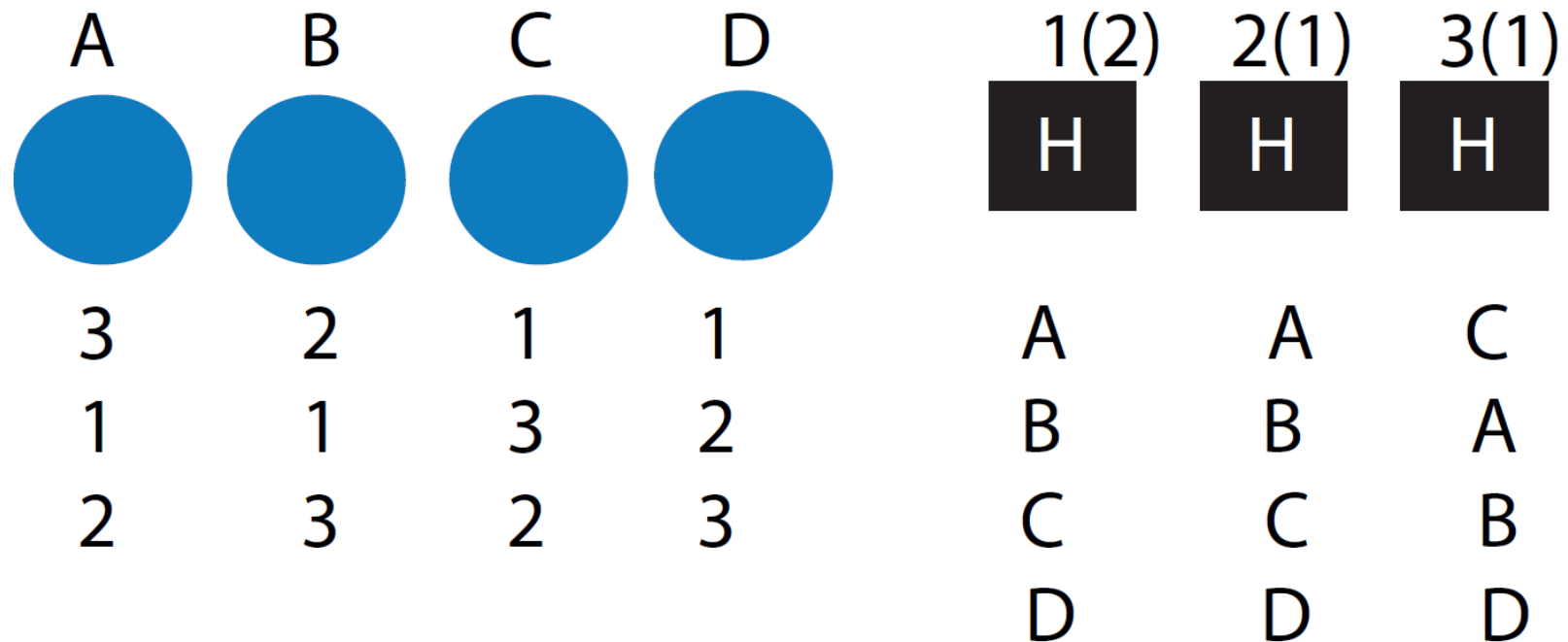
# Project Overview, Matching

- ▶ **Gale-Shapely Algorithm**
  - ▶ N men and women
  - ▶ Each man and woman has strict preferences
  - ▶ Male offers, female deferred acceptance
- ▶ Result
  - ▶ A “stable” match
  - ▶ Male optimal
  - ▶ No “unravelling”
  - ▶ Strategy resistant



Stable Solutions  
(AZ, BX, CY)  
(AY, BZ, CX)  
(AX, BY, CZ)

# Project Overview, Many to One Matching



Unique Stable Solution  
(1CD, 2B, 3A)

- ▶ Like 1:1 matching: stable and offer-side optimal
- ▶ Unlike 1:1 matching: truncations strategies can improve match

# Project Overview, Our Match



- Min/max slots
- Relevant skills (e.g., IT, software, data, design, business, event-relevant professional skills)
- ??

- List of interesting challenges (ranked/unranked)
- Skills (e.g., IT, software, data, design, business, event-relevant professional skills)
- ??

- Participant 1 offers choice 1
- Team provisionally accepts if relevant skill and space
- If offer is for a skill not yet covered and team is full, team dumps last prior acceptance for a redundant skill.
- Keep looping through participant offers until all have a team, no new accepts

# Measuring algorithm impact



- Participant background
- Event satisfaction
- Team experience
- Personal benefits



- Handle/team ID
- Team uploads
- Team switching / multiple membership
- Time to last team member joins



# Timeline

## Setup

*(June-Dec 2024)*

- ✓ Website\*
- ✓ Matching/data
- ✓ Hosting
- ✓ Legal
- ✓ Ethics

\*still adding/recruiting events, user-testing on website

## Experiment

*(Jan-Dec 2025 )*

- Refugee recruitment
- Event recruitment  
website & test
- Event attendance
- Team suggestions

## Assessment

*(Jan-April 2027)*

- Interviews
- Pre-/Post-survey refugees
- **Post-event survey**
- Comparison groups
- Statistics
- Reporting
- Extensions

# Working Together

- Our offer

- Your event in the hackfinder
- Team suggestions
- A standard event evaluation instrument
- Pooled anonymized cross-event data, to inform future event improvements



- Your help

- List your event
- Feedback on website
- Your event uses team suggestion (or control group)
- Feedback on survey
- Use the survey/share data

# Close

► Questions/comments/discussion

► Follow-up?



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## Thank You!