Automated Visualization of Grouped Networks

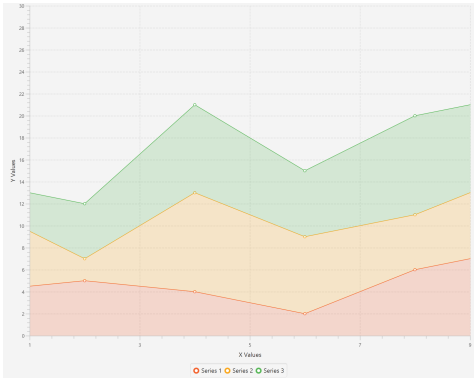
Work in Progress Presentation

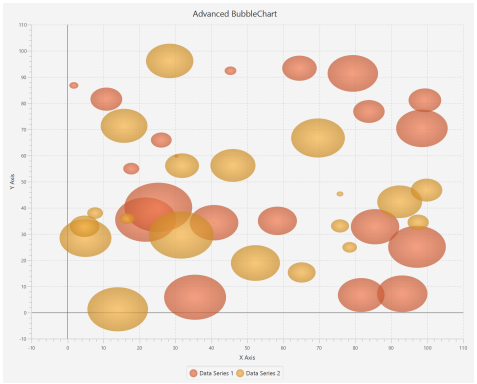
University of Brighton

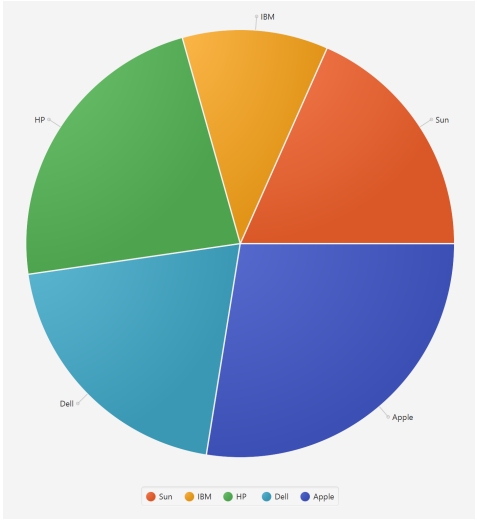
May 9, 2017

Data Visualization

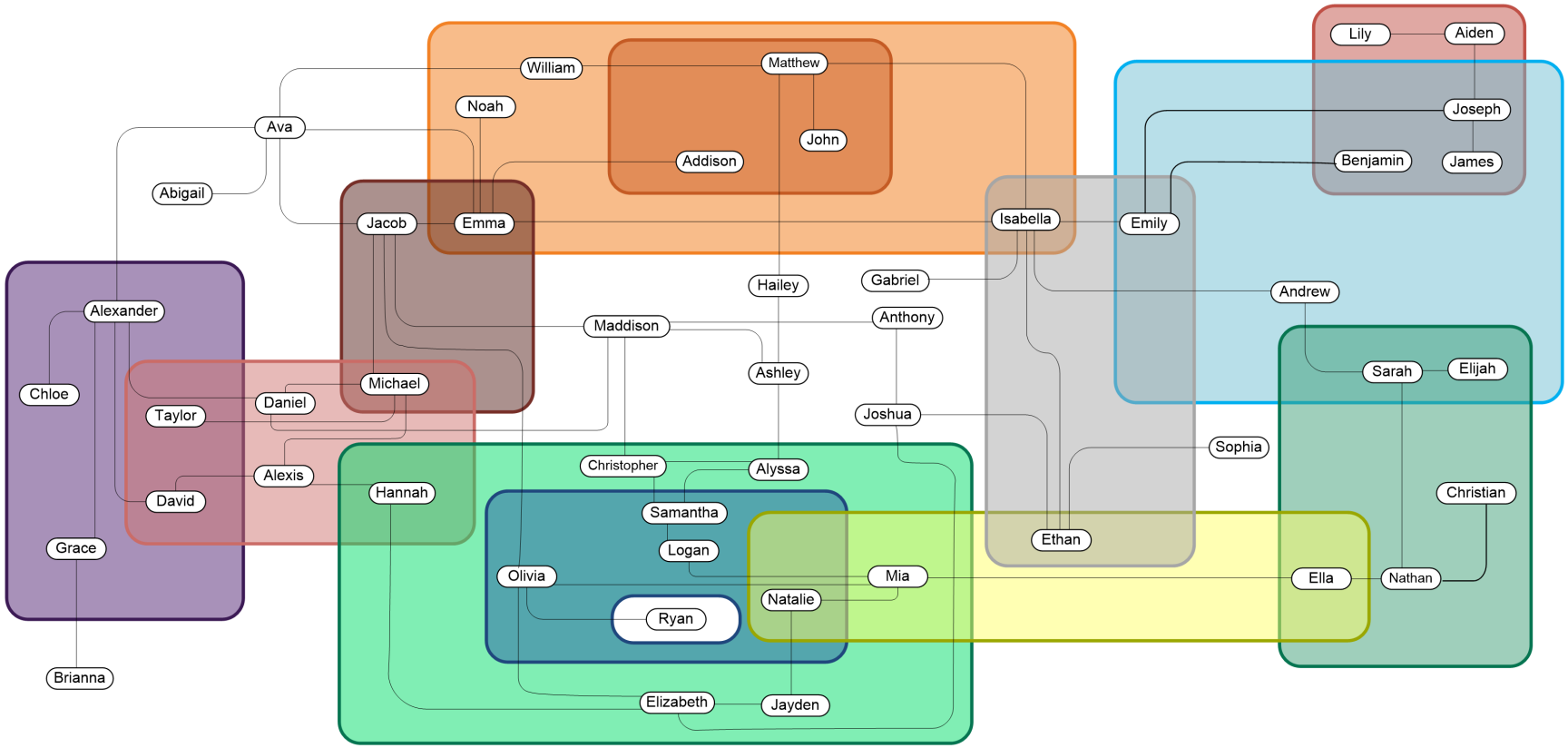
The modern world is all about data ...





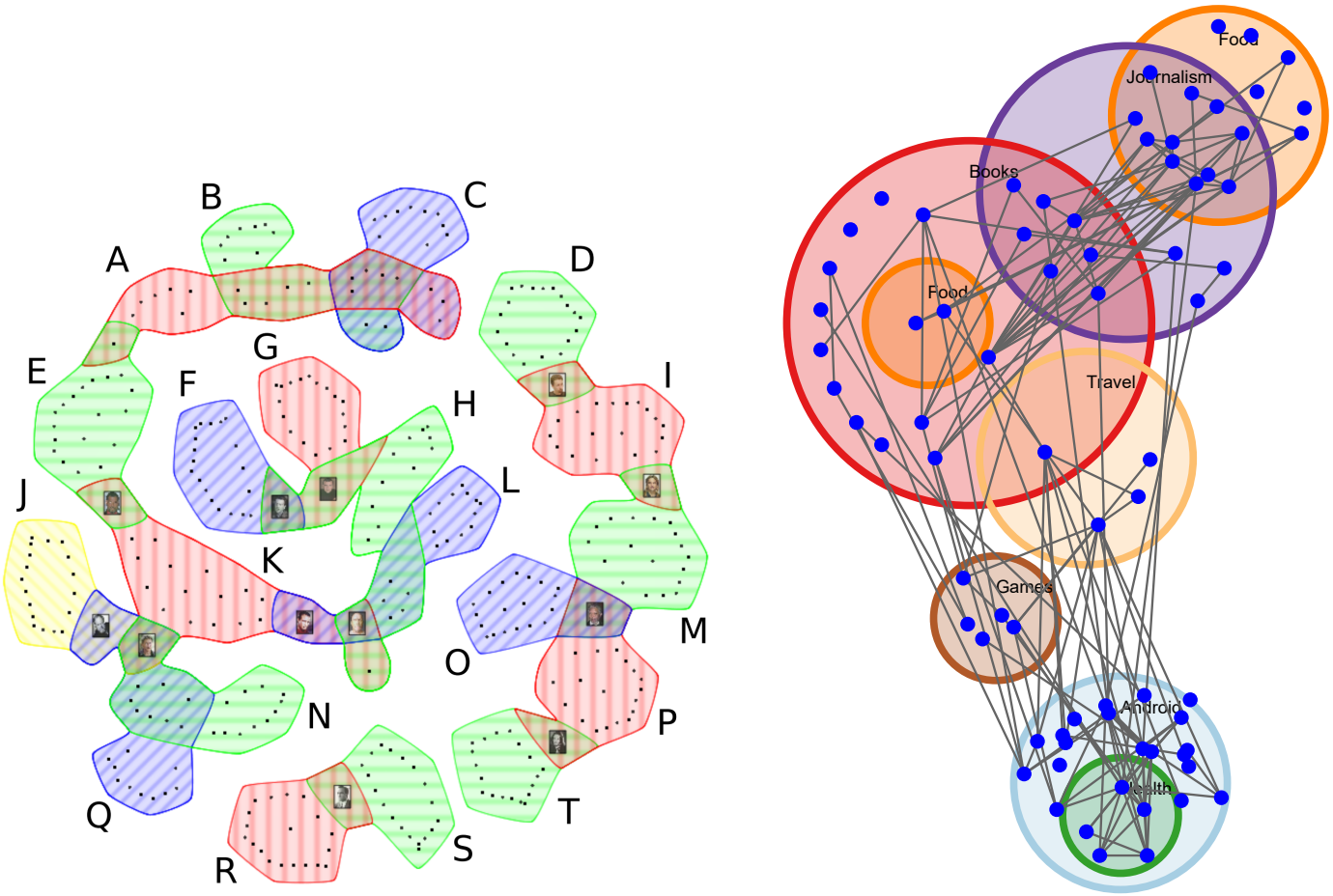


Visualization of Grouped Network Data



- Closed curves - shared interests
- Line - friendship relationship

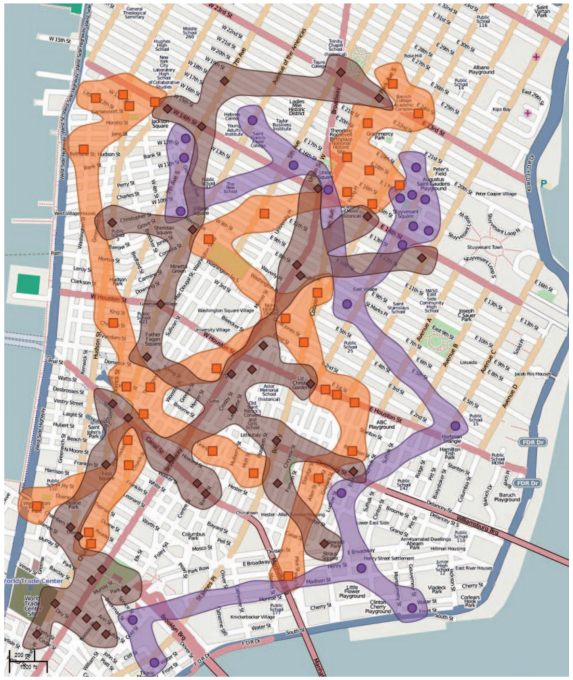
Existing Visualization Techniques



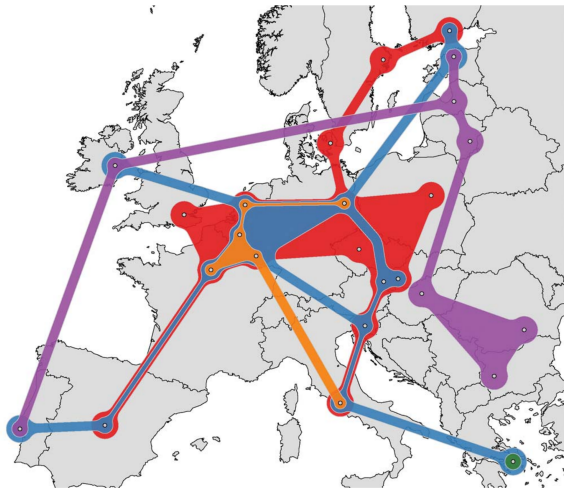
(a) EulerView (b) SetNet

Figure: The sets are visualized first.

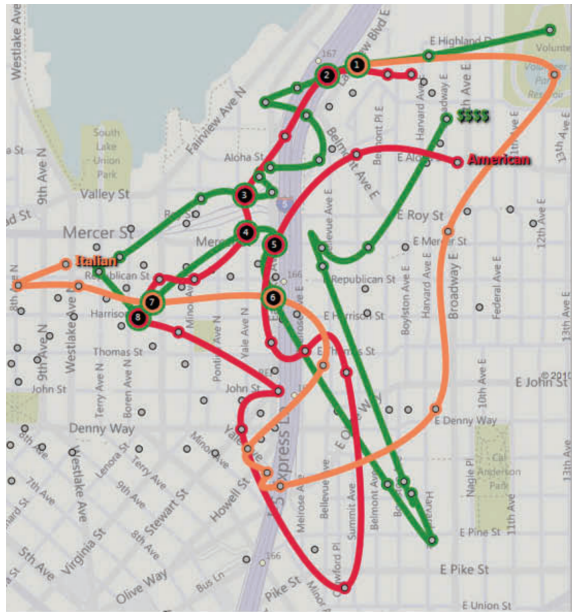
Existing Visualization Techniques



(a) BubbleSets



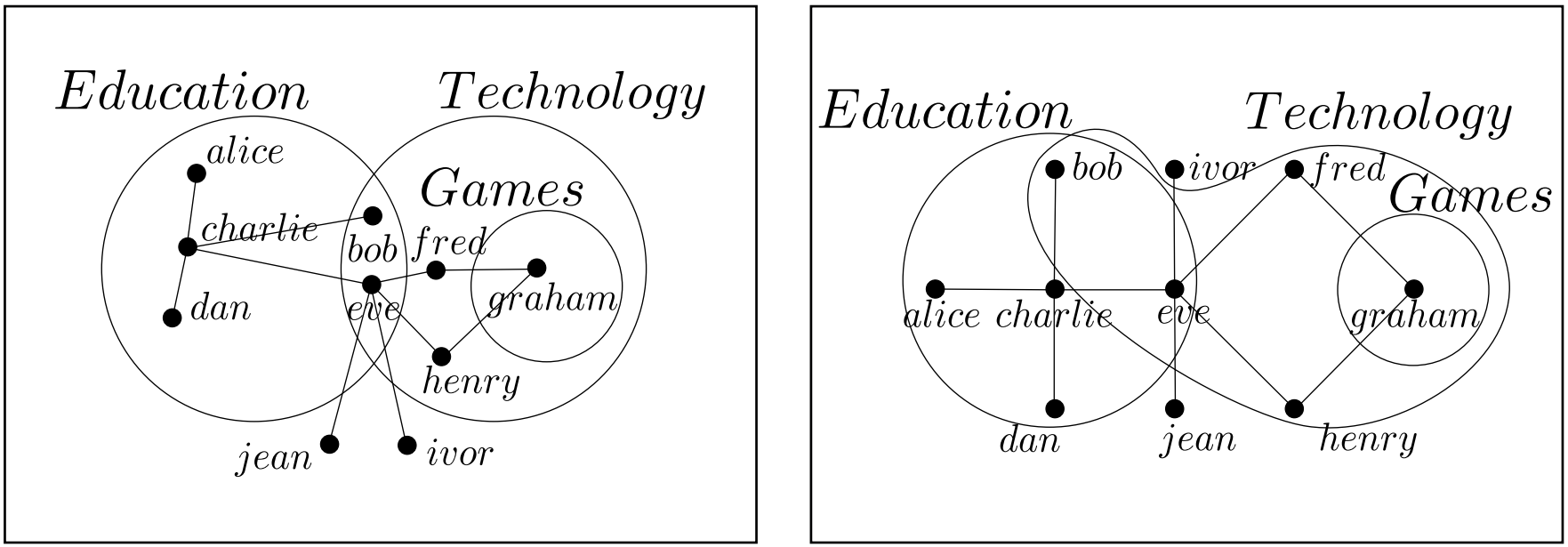
(b) KelpFusion



(c) LineSets

Figure: The network is visualized first.

Limitations



(a) Primary Rights to the Sets

(b) Primary Rights to the Network

Figure: Effect of primary spatial rights on the diagram layout.

Research Questions

1. How can we draw Euler diagrams effectively?
2. How can we draw Euler diagrams and graphs in combination simultaneously?
3. How can we automatically produce the layouts?
4. How effective are the combined layouts?

Limitations

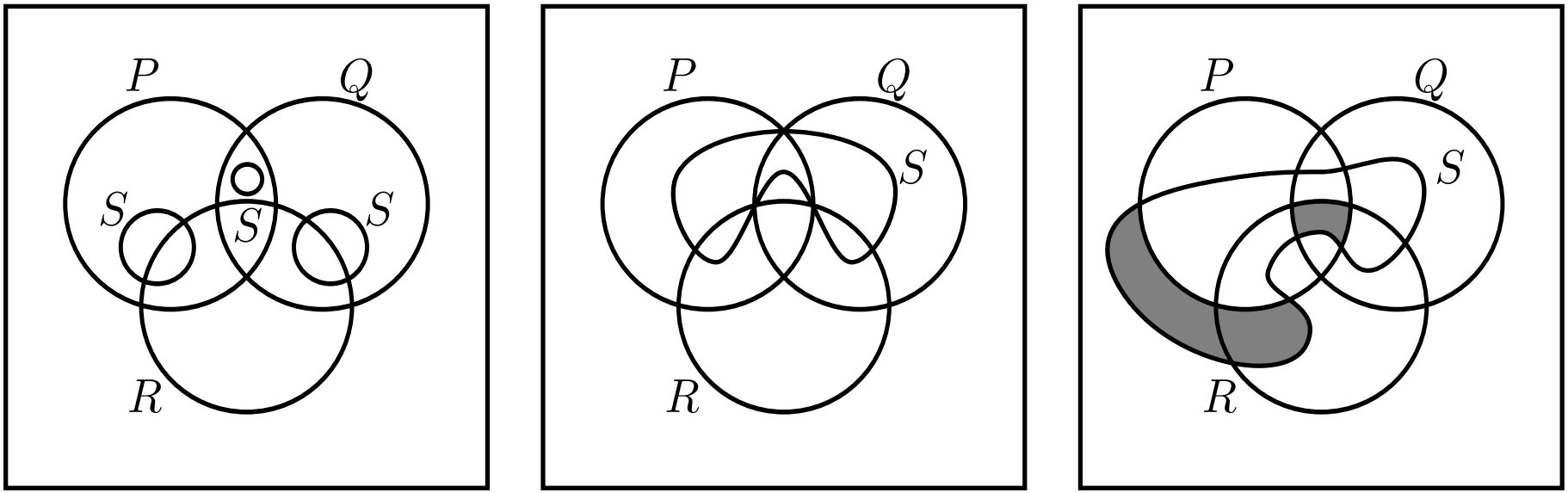
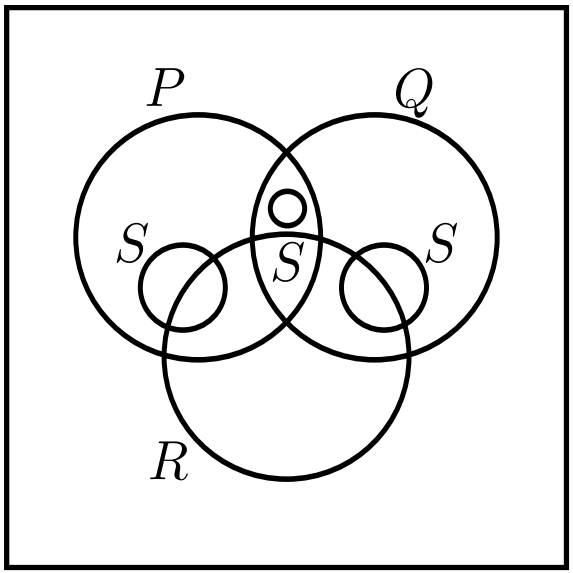
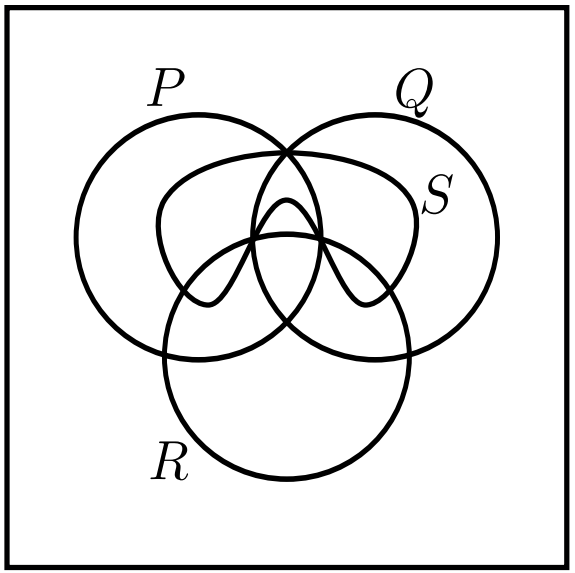
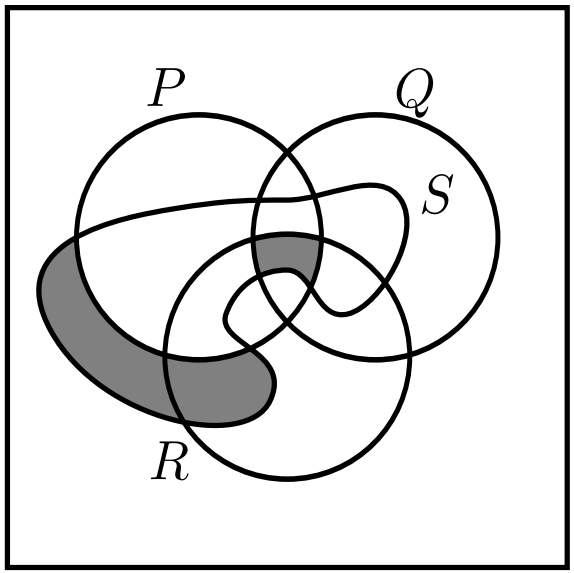


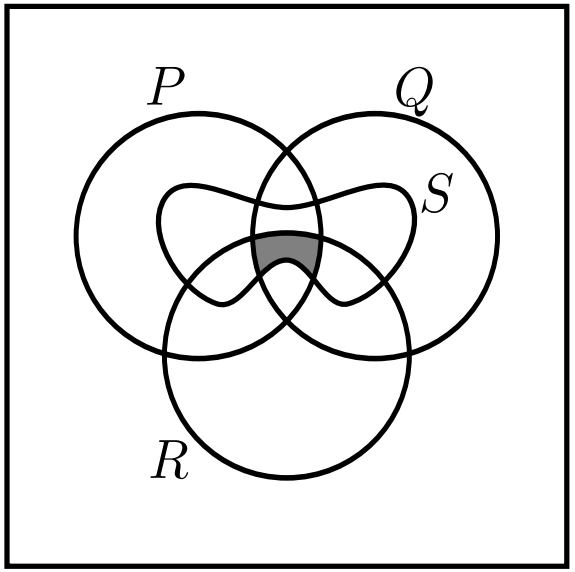
Figure: Deficiencies.

Progress to-date







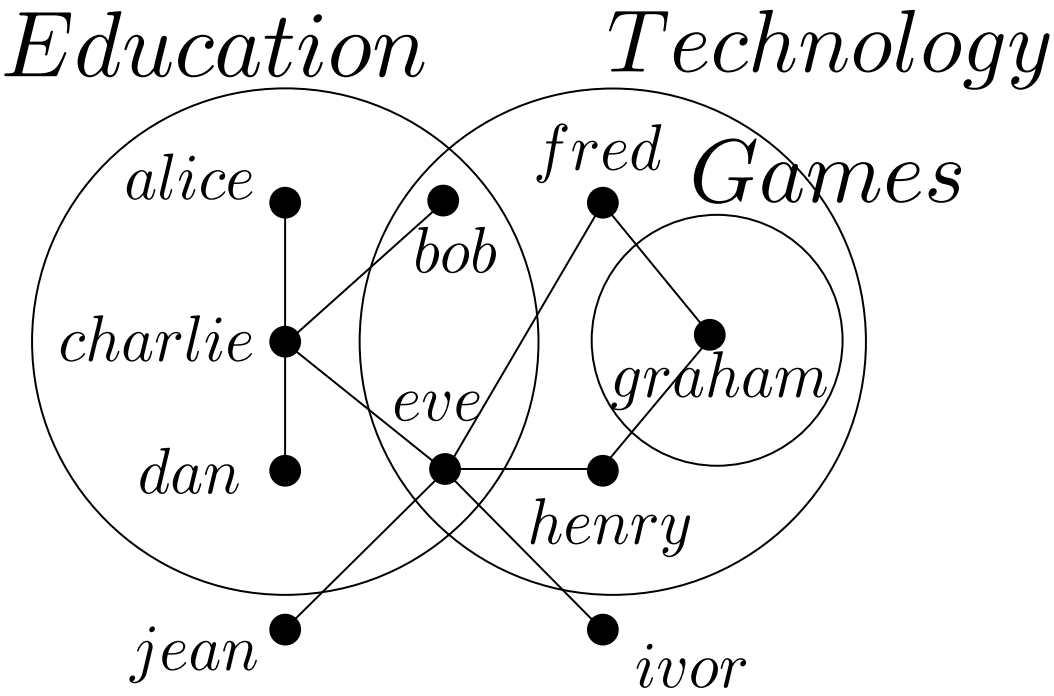


Contribution

- Embedding usability principles into theory
- Visualization tools with access to devised techniques

Remaining Work

1. Extend the iCurves algorithm to visualize graphs



2. The technique evaluation

Conclusion

Progress to-date:

- 'Effective' Euler diagrams
- The iCurves algorithm implementation

Remaining work:

- Adding graphs
- The modified algorithm implementation
- Evaluation