## PART 4

## **CHARACTERS OF PART 4**

BA	Bahorel
RR	Rabet

BF Babet's girlfriend

BG Paris barber

BJ Brujon

BK Paris baker

BO Bossuet BQ Basque

BU Mme Burgon

CM Combeferre

CO Cosette

CP Card player CR Courfeyrac

CW Concierge, Verrerie

DN Dandy

DR Drunk coachman

EN Enjolras EP Eponine FE Feuilly

GA Gavroche

GB Gibolette

GF Guard, La Force
GI M. Gillenormand

GL Poor girl GN Gardener

GS Secondhand dealer

GT Grantaire GU Gueulemer

GV Government troops HL Mme Hucheloup JA Javert JO Joly

JP Prouvaire JV Jean Valjean

MA Marius

MG Mlle Gillenormand

ML Matelotte MM M. Mabeuf MN Magnon

MO Montparnasse

MU Minister of agriculture

MW Minister's wife

NA Navet

OS Old soldier

PC Porter, barricade
PL Mother Plutarch
PS Porter, r. de l'Ouest

QU Claquesous RP Ragpicker

SI Sergeant, Imprimérie TC Three concierges

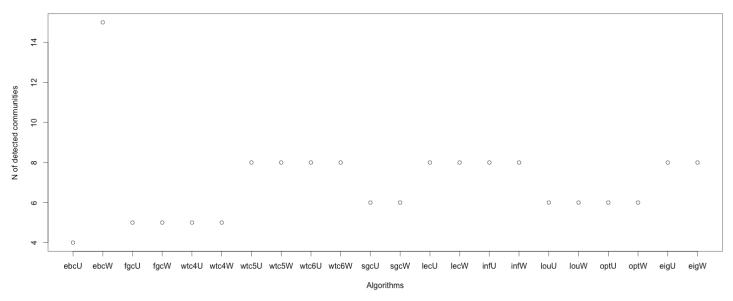
TG Théodule TH Thénardier

TM Mme Thénardier

TS Toussaint
XA Older child
XB Younger child

## **ALGORITHMS**





#### ebc

#### edge betweenness (Newman-Girvan)

M Newman and M Girvan: Finding and evaluating community structure in networks, Physical Review E 69, 026113 (2004)

#### fgc

#### greedy optimization of modularity

A Clauset, MEJ Newman, C Moore: Finding community structure in very large networks, http://www.arxiv.org/abs/cond-mat/0408187

#### wtc

#### short random walks

Pascal Pons, Matthieu Latapy: Computing communities in large networks using random walks, http://arxiv.org/abs/physics/0512106

#### sgc

#### spin-glass model and simulated annealing

J. Reichardt and S. Bornholdt: Statistical Mechanics of Community Detection, Phys. Rev. E, 74, 016110 (2006), http://arxiv.org/abs/cond-mat/0603718

#### inf

#### infomap

M. Rosvall, D. Axelsson, and C. T. Bergstrom, The map equation, Eur. Phys. J. Special Topics 178, 13 (2009). http://dx.doi.org/10.1140/epjst/e2010-01179-1

#### lou

#### multi-level optimization of modularity

Vincent D. Blondel, Jean-Loup Guillaume, Renaud Lambiotte, Etienne Lefebvre: Fast unfolding of communities in large networks. J. Stat. Mech. (2008) P10008

#### opt

#### max the modularity measure over all possible partitions

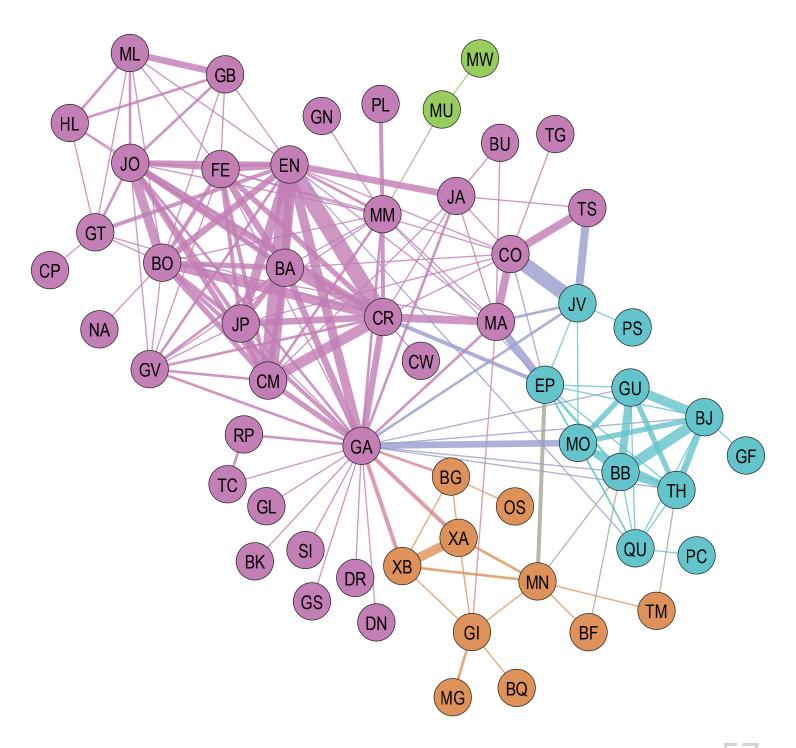
Ulrik Brandes, Daniel Delling, Marco Gaertler, Robert Gorke, Martin Hoefer, Zoran Nikoloski: On Modularity Clustering, IEEE Transactions on Knowledge and Data Engineering 20(2):172-188, 2008.

### eig

#### leading eigenvector of the community matrix

MEJ Newman: Finding community structure using the eigenvectors of matrices, Physical Review E 74 036104, 2006.

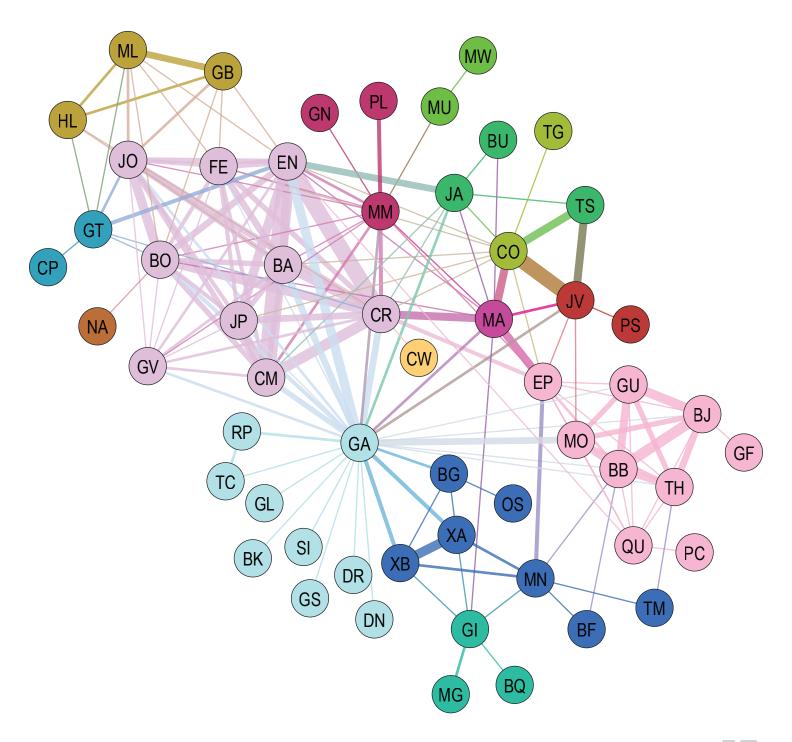
## **EDGE BETWEENNESS · UNWEIGHTED**



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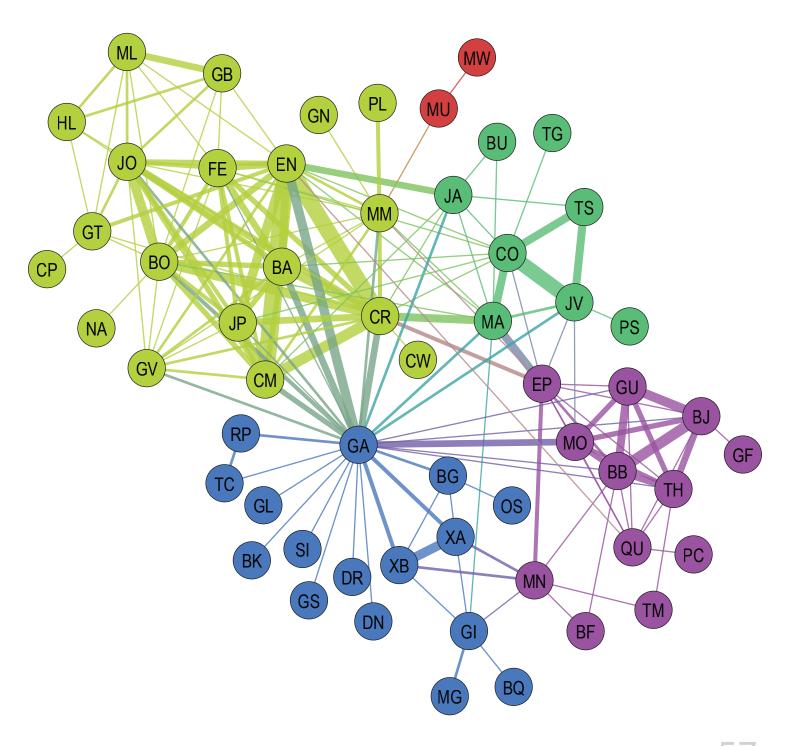
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## **EDGE BETWEENNESS** · WEIGHTED

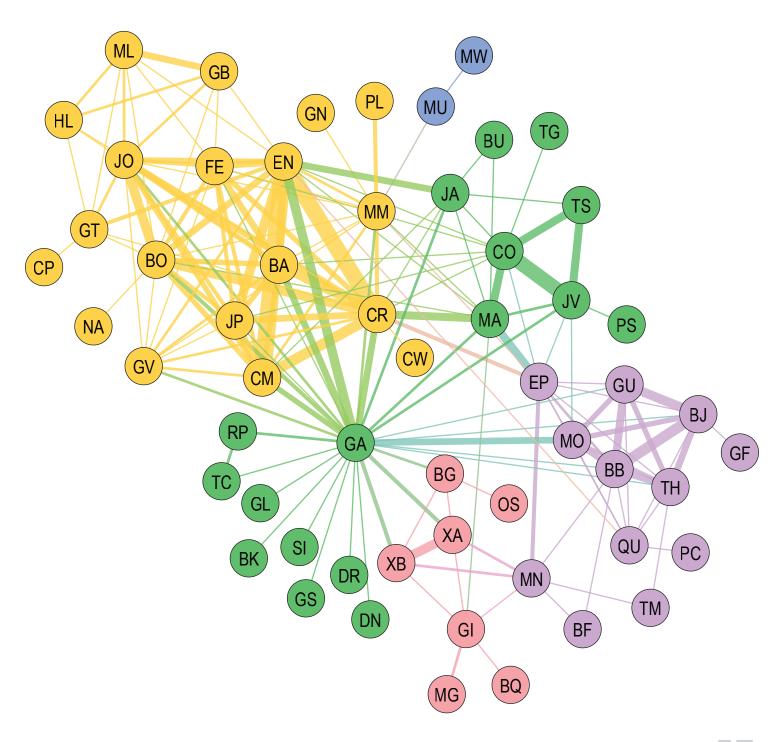


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## **FAST GREEDY** · UNWEIGHTED · WEIGHTED

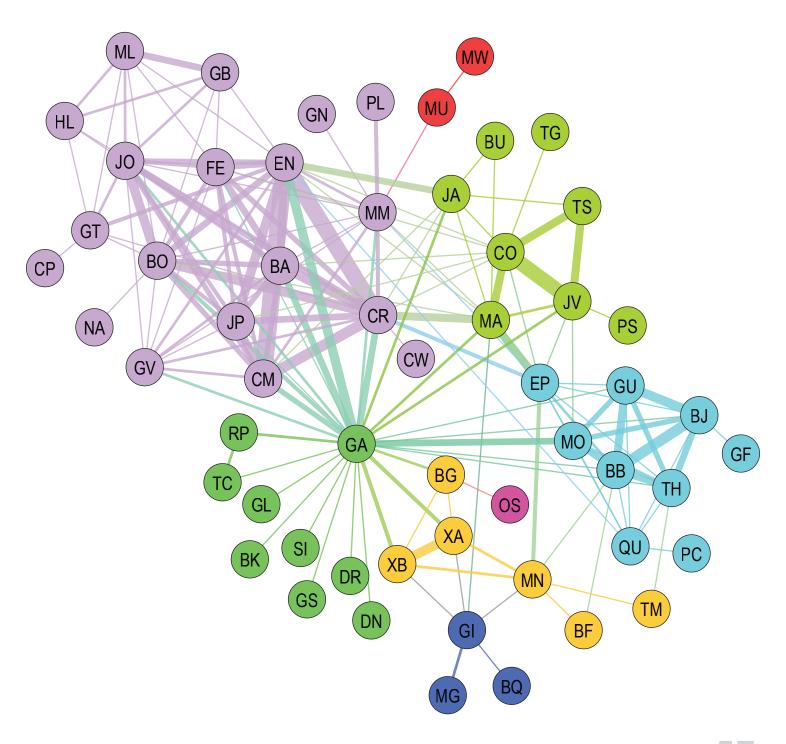


## WALK TRAP (4 STEPS) · UNWEIGHTED · WEIGHTED



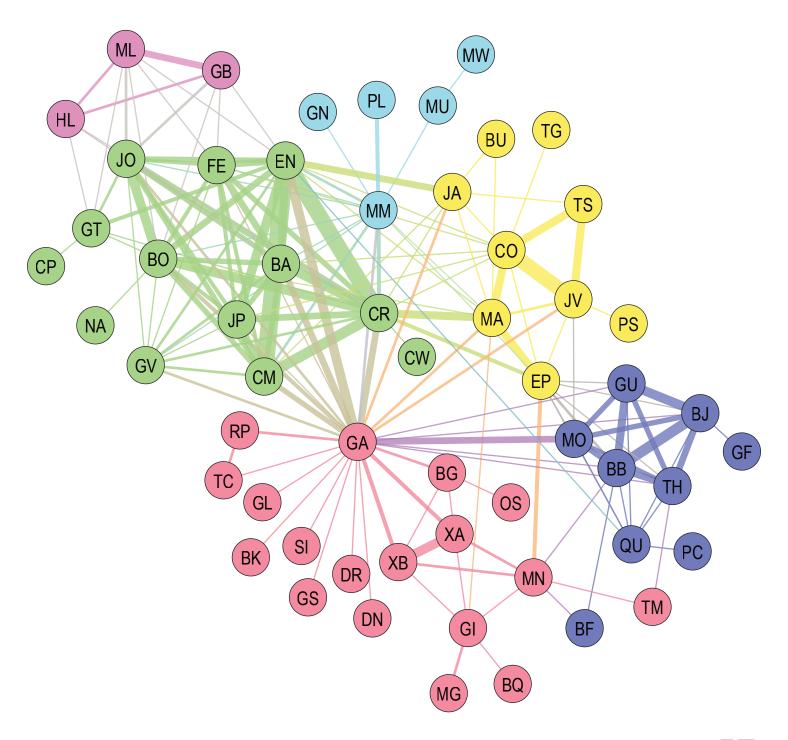
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## WALK TRAP (5&6 STEPS) · UNWEIGHTED · WEIGHTED

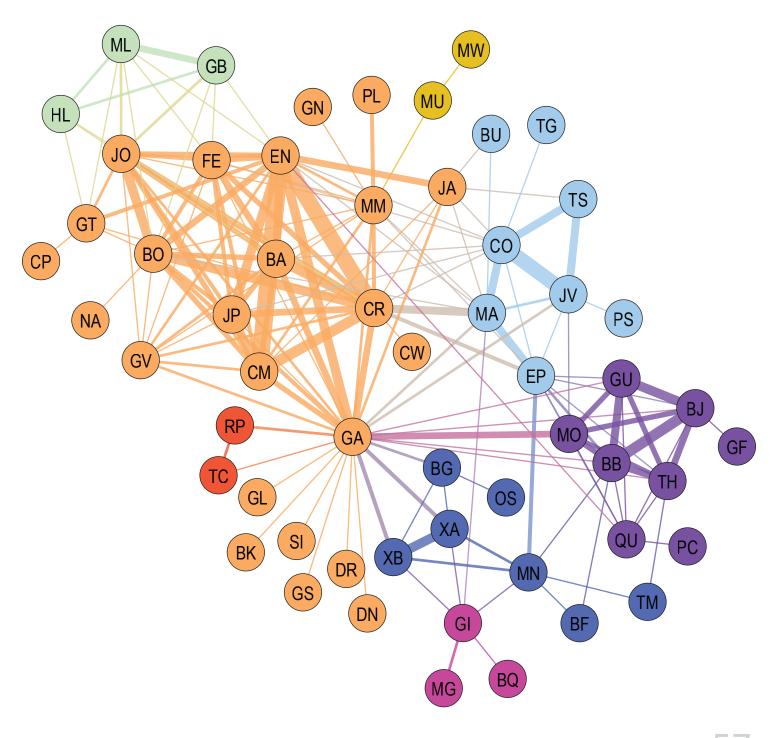


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## SPIN GLASS (200 SPINS) · UNWEIGHTED · WEIGHTED

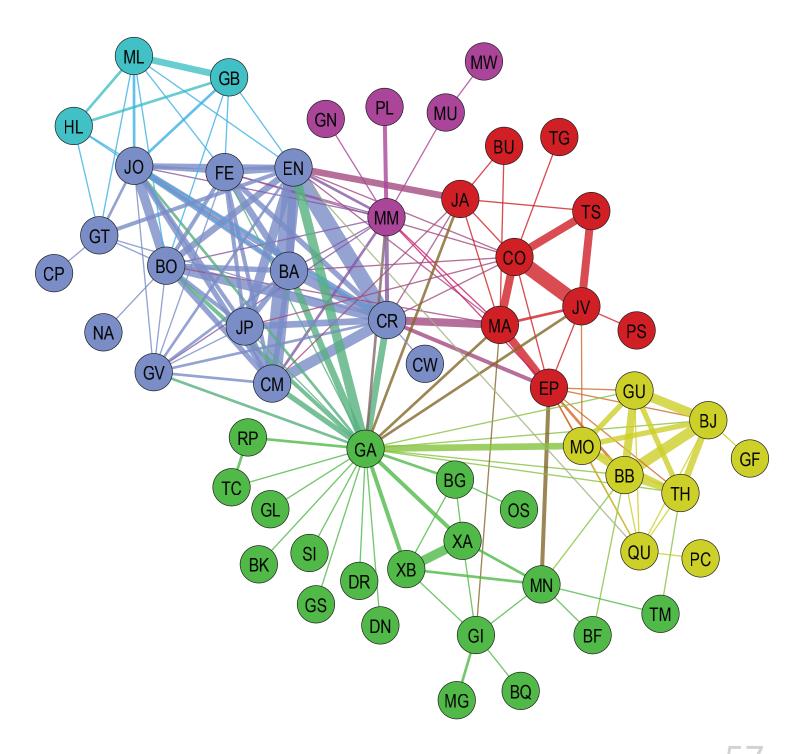


## **INFOMAP** · UNWEIGHTED · WEIGHTED

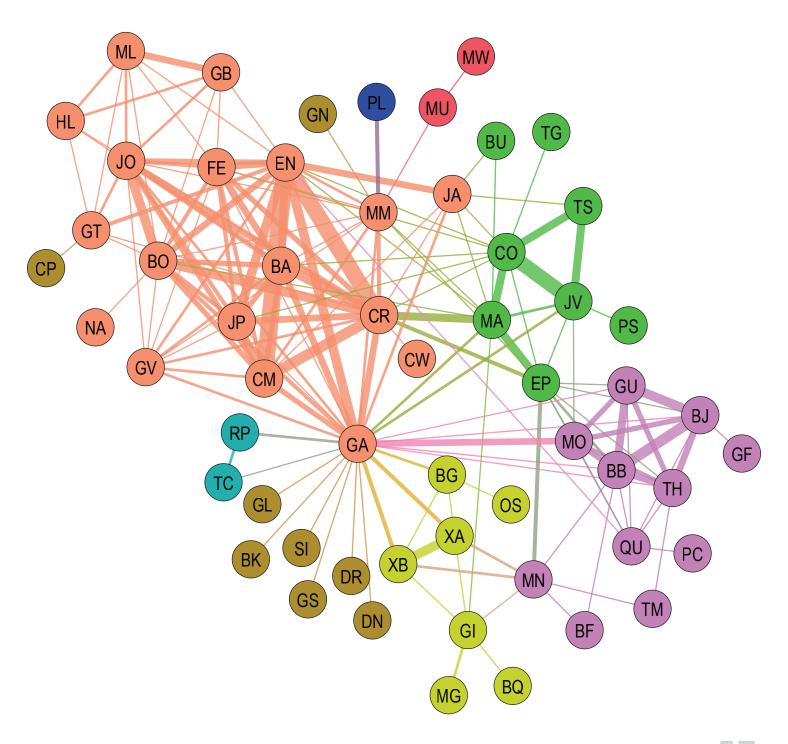


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# **MULTI-LEVEL MODULARITY** · UNWEIGHTED · WEIGHTED **OPTIMAL COMMUNITY** · UNWEIGHTED · WEIGHTED



## **LEADING EIGENVECTOR** · UNWEIGHTED · WEIGHTED



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