# Fragkiskos D. Malliaros

Bâtiment Bouygues, CVN lab, Room SC.217 Phone: (+33) 695 50 51 90 CentraleSupélec

Skype ID: frank8m

8 rue Joliot-Curie E-mail: fragkiskos.malliaros@centralesupelec.fr

WWW: http://fragkiskos.me

PERSONAL First Name: Fragkiskos Date of Birth: 7 November 1985 Last Name: Malliaros Place of Birth: Sparta, Greece INFORMATION

Father's Name: Dimitrios Citizenship: Greek

**ACADEMIC** APPOINTMENTS

91190 Gif-sur-Yvette, France

# CentraleSupélec, University of Paris-Saclay, USA

Oct. 2017 - present

· Assistant Professor Member of the Center for Visual Computing Associate researcher at Inria Saclay

# University of California, San Diego, USA

Oct. 2016 - Sept. 2017

• Data Science Postdoctoral Scholar Department of Computer Science and Engineering, Artificial Intelligence group Member of the Qualcomm Institute and the Information Theory and Applications Center (ITA)

# École Polytechnique, France

Oct. 2015 - Sept. 2016

• Postdoctoral Researcher; Computer Science Laboratory (LIX)

#### **EDUCATION**

# École Polytechnique, Palaiseau, Paris area, France

• Ph.D. in Computer Science, February 2012 - September 2015

Thesis title: "Mining Social and Information Networks: Dynamics and Applications"

Mention: "Très honorable"

Advisor: Michalis Vazirgiannis, Professor

# University of Patras, Patras, Greece

• M.Sc. in Computer Science & Engineering, October 2009 - July 2011

Thesis title: "Structural analysis of time-evolving graphs: properties, models and applications"

Advisor: Vasileios Megalooikonomou, Professor

GPA: 9.75/10

• Diploma in Computer Engineering and Informatics, October 2004 - July 2009

Thesis title: "Parameter-free data mining techniques" Advisor: Vasileios Megalooikonomou, Professor GPA: 8.26/10 (ranked  $5^{th}$  out of approx. 270 students)

RESEARCH **INTERESTS**  Data mining, machine learning, graph mining, network science, social network analysis, natural language processing

#### AWARDS / HONORS Best paper award, TextGraphs workshop, NAACL

June 2018

#### Thesis Prize (Prix de thèse), École Polytechnique

June 2016

• One of the best Ph.D. Dissertations in École Polytechnique for 2015

## Google European Doctoral Fellowship

Sep. 2012

• Awarded the 2012 Google Europe Fellowship in Graph Mining (3-year bursary) [15 fellowhips were awarded in Europe, 40 worldwide]

#### Intra-University Research Network in Web Science, University of Patras

April 2012

• My M.Sc. thesis was awarded for being one of the best theses in the area of Web Science and Future Internet for the academic year 2010-2011

#### **Department of Computer Engineering and Informatics, University of Patras**

**July 2009** 

• Graduated  $5^{th}$  out of approx. 270 students of my class

#### **Greek State Scholarships Foundation (IKY)**

2007, 2008

- Performance award (€1,450) for ranking 3<sup>rd</sup> out of approx. 270 students in the academic year 2007-08 (4<sup>th</sup> year of my studies)
- Honorable mention for ranking  $4^{th}$  out of approx. 270 students in the academic year 2006-07 ( $3^{rd}$  year of my studies)

## Eurobank EFG Group, "Great Moment for Education" program

Oct. 2003

 Award for achieving the highest grade of my school at the pan-Hellenic university admission examinations

### **Greek Ministry of Education**

1997-2003

• Greek Ministry of Education awards for excellence in high school (1997-2003)

## RESEARCH EXPERIENCE

# Computer Science Laboratory (LIX), École Polytechnique, France

Feb. 2012 - Sept. 2016

- Research Assistant, Data Science and Mining (DaSciM) Group
   Advisor: Prof. Michalis Vazirgiannis

   Research on mining and analyzing large-scale real-world networks.
- Data Scientist (July 2013 April 2014)

Work on a data science project in collaboration with AIRBUS. Analysis of flight report data that are generated by an aircraft, towards performing data exploration and failure occurrence prediction.

#### Palo Alto Research Center (PARC), California, USA

June 2014 - Aug. 2014

Research Intern, Interaction and Analytics Laboratory
 Advisors: Dr. Juan (Julia) Liu and Dr. Sricharan Kumar

 Work on the problem of anomaly detection in social networks.

# Computer Engineering and Informatics Dept., University of Patras, Greece Sep. 2009 - Jan. 2012

• Research Assistant, Multidimensional Data Analysis and Knowledge Management Group
Participation in the EC FP7-ICT ARMOR project (Advanced multi-paRametric Monitoring and analysis for diagnosis and Optimal management of epilepsy and Related brain disorders); Assisted in several EU and national research proposals; Systems Administrator

#### PUBLICATIONS

#### **Journal Articles**

- Jordi Casas-Roma, Julián Salas, Fragkiskos D. Malliaros and Michalis Vazirgiannis. *k*-Degree Anonymity on Directed Networks. *Knowledge and Information Systems (KAIS)*, Springer, 2018. (Impact Factor: 2.247).
- Fragkiskos D. Malliaros, Maria-Evgenia G. Rossi and Michalis Vazirgiannis. Locating Influential Nodes in Complex Networks. *Scientific Reports*, 6(19307) Nature Publishing Group, 2016. (Impact Factor: 5.578).
- Fragkiskos D. Malliaros and Michalis Vazirgiannis. Vulnerability Assessment in Social Networks under Cascade-Based Node Departures. *Europhysics Letters (EPL)*, 110(6): 68006, IOP Science, 2015. (Impact Factor: 2.095).

- Fragkiskos D. Malliaros, Vasileios Megalooikonomou and Christos Faloutsos. Estimating Robustness in Large Social Graphs. *Knowledge and Information Systems (KAIS)*, 45(3): 645–678, Springer, 2015. (Impact Factor: 1.782).
- Fragkiskos D. Malliaros and Michalis Vazirgiannis. Clustering and Community Detection in Directed Networks: A Survey. *Physics Reports*, 533(4): 95–142, Elsevier, 2013. (Impact Factor: 22.929).

#### **Conference Papers**

- Konstantinos Skianis, Fragkiskos D. Malliaros and Michalis Vazirgiannis. Fusing Document, Collection and Label Graph-based Representations with Word Embeddings for Text Classification. In Proceedings of the 12<sup>th</sup> NAACL-HLT Workshop on Graph-Based Natural Language Processing (TextGraphs), New Orleans, Louisiana, 2018.
- Ke Sun, Fragkiskos D. Malliaros, Frank Nielsen and Michalis Vazirgiannis. Reconstructing Uncertain Graphs Based on Low-Rank Factorizations. In Proceedings of the Conference From Physics to Information Sciences and Geometry (Entropy), Barcelona, 2018.
- Maria-Evgenia G. Rossi, Bowen Shi, Nikolaos Tziortziotis, Fragkiskos D. Malliaros, Christos Giatsidis and Michalis Vazirgiannis. MATI: An Efficient Algorithm for Influence Maximization in Social Networks. In Proceedings of the *International Conference on Complex Networks and Their Applications (Complex Networks)*, Lyon, France, 2017.
- Kumaran Gunasekaran, Jeyavaishnavi Muralikumar, Sudarshan Srinivasa Ramanujam, Balasubramaniam Srinivasan and Fragkiskos D. Malliaros. NetGloVe: Learning Node Representations for Community Detection. In Proceedings of the *International Conference on Complex Networks and Their Applications (Complex Networks)*, Lyon, France, 2017.
- Damien Seux, Fragkiskos D. Malliaros, Apostolos Papadopoulos, and Michalis Vazirgiannis. Core
  Decomposition of Uncertain Graphs Using Representative Instances. In Proceedings of the *International Conference on Complex Networks and Their Applications* (*Complex Networks*), *Lyon, France*,
  2017.
- Marc Mitri, Fragkiskos D. Malliaros, and Michalis Vazirgiannis. Sensitivity of Community Structure to Network Uncertainty. In Proceedings of the 2017 *SIAM International Conference on Data Mining (SDM)*, Houston, Texas, 2017.
- Konstantinos Skianis, Maria-Evgenia G. Rossi, Fragkiskos D. Malliaros and Michalis Vazirgiannis. SPREADVIZ: Analytics and Visualization of Spreading Processes in Social Networks. In Proceedings of the *IEEE International Conference on Data Mining (ICDM)*, Barcelona, Spain, 2016. (Demo Paper).
- Antoine J.-P. Tixier, Fragkiskos D. Malliaros and Michalis Vazirgiannis. A Graph Degeneracy-based Approach to Keyword Extraction. In Proceedings of the 2016 Conference on Empirical Methods in Natural Language Processing (EMNLP), Austin, Texas, 2016. (Long Paper).
- Fragkiskos D. Malliaros, Konstantinos Skianis and Michalis Vazirgiannis. Graph-Based Term Weighting for Text Categorization. In Proceedings of the IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining (ASONAM), Social Media and Risk Workshop, Paris, France, 2015.
- Fragkiskos D. Malliaros and Michalis Vazirgiannis. Disengagement Social Contagion: Assessing Network Vulnerability under Node Departures. In Proceedings of the *International Conference on Computational Social Science* (ICCSS), Helsinki, Finland, 2015.
- Maria-Evgenia G. Rossi, Fragkiskos D. Malliaros, and Michalis Vazirgiannis. Spread it Good, Spread
  it Fast: Identification of Influential Nodes in Social Networks. In Proceedings of the 24<sup>th</sup> International
  World Wide Web Conference (WWW), Florence, Italy, 2015.
- Christos Giatsidis, Fragkiskos D. Malliaros, Dimitrios M. Thilikos and Michalis Vazirgiannis. CoreCluster: A Degeneracy Based Graph Clustering Framework. In Proceedings of the 28<sup>th</sup> AAAI Conference on Artificial Intelligence (AAAI), Québec City, Canada, 2014.
- Fragkiskos D. Malliaros and Michalis Vazirgiannis. To Stay or Not to Stay: Modeling Engagement Dynamics in Social Graphs. In Proceedings of the 22<sup>nd</sup> ACM International Conference on Information and Knowledge Management (CIKM), San Francisco, California, 2013. (Full Paper; Acceptance Rate:

16.8%).

- Amalia Charisi, Fragkiskos D. Malliaros, Evangelia I. Zacharaki, and Vasileios Megalooikonomou. Multiresolution Similarity Search in Time Series Data: An Application to EEG Signals. In Proceedings of the 6<sup>th</sup> ACM International Conference on PErvasive Technologies Related to Assistive Environments (PETRA), Island of Rhodes, Greece, 2013.
- Fragkiskos D. Malliaros, Vasileios Megalooikonomou, and Christos Faloutsos. Fast Robustness Estimation in Large Social Graphs: Communities and Anomaly Detection. In Proceedings of the 2012 SIAM International Conference on Data Mining (SDM), Anaheim, CA, 2012.
- Fragkiskos D. Malliaros and Vasileios Megalooikonomou. Expansion Properties of Large Social Graphs. In Proceedings of the 2<sup>nd</sup> DASFAA International Workshop on Social Networks and Social Media Mining on the Web (SNSMW), Hong Kong, 2011.

#### **Working Papers**

- Duong Nguyen and Fragkiskos D. Malliaros. BiasedWalk: Biased Sampling for Representation Learning on Graphs. *arXiv:1809.02482*, 2018.
- Antoine J.-P. Tixier, Maria-Evgenia G. Rossi, Fragkiskos D. Malliaros, Jesse Read and Michalis Vazirgiannis. Perturb and Combine to Identify Influential Spreaders in Real-World Networks. arXiv:1807.09586, 2018.

#### **Tutorials**

- Fragkiskos D. Malliaros\*, Polykarpos Meladianos\* and Michalis Vazirgiannis\*. GGraphRep: Boosting Text Mining, NLP and Information Retrieval with Graphs. In Proceedings of the *CM International Conference on Information and Knowledge Management (CIKM)*, Turin, Italy, 2018.
- Fragkiskos D. Malliaros\*, Polykarpos Meladianos\* and Michalis Vazirgiannis\*. Graph-based Text Representations: Boosting Text Mining, NLP and Information Retrieval with Graphs. In Proceedings of the *The Web Conference (WWW)*, Lyon, France, 2018.
- Fragkiskos D. Malliaros\*, Apostolos Papadopoulos\*, and Michalis Vazirgiannis\*. Core Decomposition of Networks: Concepts, Algorithms and Applications. In Proceedings of the *European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML-PKDD)*, Skopje, 2017.
- Fragkiskos D. Malliaros\* and Michalis Vazirgiannis\*. Graph-based Text Representations: Boosting Text Mining, NLP and Information Retrieval with Graphs. In Proceedings of the 2017 Conference on Empirical Methods in Natural Language Processing (EMNLP), Copenhagen, Denmark, 2017.
- Fragkiskos D. Malliaros\*, Apostolos Papadopoulos\*, and Michalis Vazirgiannis\*. Core Decomposition of Networks: Concepts, Algorithms and Applications. In Proceedings of the *IEEE International Conference on Data Mining (ICDM)*, Barcelona, Spain, 2016.
- Fragkiskos D. Malliaros\*, Apostolos Papadopoulos\*, and Michalis Vazirgiannis\*. Core Decomposition in Graphs: Concepts, Algorithms and Applications. In Proceedings of the 18<sup>th</sup> International Conference on Extending Database Technology (**EDBT**), Bordeaux, France, 2016.
- Fragkiskos D. Malliaros\*, Michalis Vazirgiannis\*, and Apostolos Papadopoulos\*. Core Decomposition: Algorithms and Applications. In Proceedings of the *IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining (ASONAM)*, Paris, France, 2015.
- Christos Giatsidis\*, Fragkiskos D. Malliaros\*, and Michalis Vazirgiannis\*. Community Detection and Evaluation in Social and Information Networks (Tutorial). In Proceedings of the 15<sup>th</sup> International Conference on Web Information System Engineering (WISE), Thessaloniki, Greece, 2014.
- Christos Giatsidis\*, Fragkiskos D. Malliaros\*, and Michalis Vazirgiannis\*. Graph Mining Tools for Community Detection and Evaluation in Social Networks and the Web (Tutorial). In Proceedings of the 22<sup>nd</sup> International World Wide Web Conference (WWW), Rio de Janeiro, Brazil, 2013.

Christos Giatsidis\*, Fragkiskos D. Malliaros\*, and Michalis Vazirgiannis\*. Advanced Graph Mining for Community Evaluation in Social Networks and the Web (Tutorial). In Proceedings of the 6<sup>th</sup> ACM International Conference on Web Search and Data Mining (WSDM), Rome, Italy, 2013.

#### Other

- Christos Giatsidis\*, Fragkiskos D. Malliaros\*, and Michalis Vazirgiannis\*. Community Detection and Evaluation in Real Graphs. Tutorial at 8<sup>th</sup> Hellenic Conference on Artificial Intelligence (SETN), Ioannina, Greece, 2014.
- Christos Giatsidis\*, Fragkiskos D. Malliaros\*, François Rousseau\* and Michalis Vazirgiannis\*. Search in BigData<sup>2</sup> When Big Text meets Big Graph (Position paper). *World Summit on Big Data and Organization Design*, Paris, France, 2013.
- Fragkiskos D. Malliaros and Vasileios Megalooikonomou. Parameter-Free Data Mining Techniques. In Proceedings of the 3<sup>rd</sup> Panhellenic Scientific Student Conference on Informatics, Related Technologies and Applications (EUREKA), Corfu, Greece, 2009.

# TEACHING EXPERIENCE

#### **Main Instructor**

- Network Science Analytics Spring 2018

  M.Sc. in Data Sciences and Business Analytics, CentraleSupélec and ESSEC (57 students)
- Machine Learning
   M.Sc. in Data Sciences and Business Analytics, CentraleSupélec and ESSEC (57 students)
- Graph Mining and Network Analysis
  Graduate-level course (M.S./Ph.D.) at UC San Diego (57 students)

  Spring 2017

# **Instructor in Guest Lectures**

- Graph and Text Mining
   Topics: Text and Graph Mining with Python (Laboratory; 6 hours)

   Professional training program in Orange offered by École Polytechnique, France
- Graph and Text Mining
   Topic: Graph Mining and Analysis with Python (Laboratory; 3 hours)

   Professional Training Program: Data Science Starter Program (DSSP), École Polytechnique, France

#### **Teaching Assistant**

 Data Science and Mining Master 1 Course, École Polytechnique

- Winter 2014, Winter 2015
- Advanced Learning for Text and Graph Data
   M.Sc. Program in *Mathematics, Vision, Learning (MVA)*, ENS Cachan, France
   M.Sc. Program in *Mathematics for Data Science and Big Data*, École Polytechnique and Télécom ParisTech, France
- Machine Learning for Big Data
   Spring 2014
   M.Sc. Program in Conception & Management of Complex Informatic Systems, École Polytechnique
- Databases I
  University of Patras, Greece

  Fall 2009, Fall 2010
- Databases II
  University of Patras, Greece

  Spring 2010, Spring 2011

<sup>\*:</sup> Equal contribution; authors in alphabetical order.

Spring 2007

 Undergraduate laboratory of "Digital Design" University of Patras, Greece

# STUDENTS MENTORED

- Laurent Nieuviarts. Student internship and Master's thesis at École Polytechnique (April 2016 September 2016).
- Bowen Shi. Student internship and Master's thesis at ENSTA ParisTech and University of Pierre and Marie Curie (UPMC) (April 2016 September 2016).
- Damien Seux. Semester project at École Polytechnique (November 2015 March 2016).
- Konstantinos Skianis. Student internship and Master's thesis at ENS Cachan (April 2015 September 2015). Currently Ph.D. student at École Polytechnique (October 2015 present).
- Marc Mitri. Student internship and Master's thesis at École Polytechnique (April 2015 September 2015). Currently in industry.
- Maria-Evgenia Rossi. Ph.D. student at École Polytechnique (February 2014 present).

#### **TALKS**

- Mining Social and Information Networks: Robustness, Communities and Influential Entities. Center for Visual Computing, CentraleSupélec, Paris, France, December 2016.
- Mining Social and Information Networks. AI Seminar, UC San Diego, San Diego, CA, October 2016.
- Mining Social and Information Networks. Télécom ParisTech, Paris, France, June 2016.
- Mining Social and Information Networks. NEC Laboratories Europe, Heidelberg, Germany, April 2016.
- Degeneracy-Based Mining of Social and Information Networks: Dynamics and Applications. Complex Networks Team, Laboratoire d'Informatique de Paris 6 (LIP6), Pierre and Marie Curie University, Paris, France, April 2016.
- Degeneracy-Based Mining of Social and Information Networks: Dynamics and Applications. Center for Complex Network Research (CCNR), Network Science Institute, Northeastern University, Boston, USA, March 2016.
- Mining Social and Information Networks. Bell Labs, Alcatel-Lucent, Dublin, Ireland, October 2015.
- Disengagement Social Contagion: Assessing Network Vulnerability under Node Departures. Oral presentation at the International Conference on Computational Social Science (ICCSS), Helsinki, Finland, 2015.
- Predicting Quitting Behavior in Enterprise Social Networks. Palo Alto Research Center (PARC), Palo Alto, California, August 2014.
- Robustness and Engagement Dynamics in Social Graphs. Palo Alto Research Center (PARC), Palo Alto, California, June 2014.
- To Stay or Not to Stay: Modeling Engagement Dynamics in Social Graphs.
  - Oral presentation at 22<sup>nd</sup> ACM International Conference on Information and Knowledge Management (CIKM), San Francisco, California, October 2013.
  - Presentation at Google Zürich, September 2013.
- Big Graph and Text Mining. DigiCosme Research day, Université Paris-Sud, Paris, France, July 2013.
- Graph Mining Tools for Community Detection and Evaluation in Social Networks and the Web. Tutorial at 22<sup>nd</sup> International World Wide Web Conference (**WWW**), Rio de Janeiro, Brazil, May 2013.
- Advanced Graph Mining for Community Evaluation in Social Networks and the Web. Tutorial at 6<sup>th</sup>
  ACM International Conference on Web Search and Data Mining (WSDM), Rome, Italy, February
  2013.
- Fast Robustness Estimation in Large Social Graphs: Communities and Anomaly Detection.
  - Optimization Seminar, École Polytechnique, Paris, France, November 2012.

- DBWeb group seminar, Télécom ParisTech, Paris, France, May 2012.
- SIAM International Conference on Data Mining (SDM), Anaheim, CA, April 2012.
- Expansion Properties of Large Social Graphs. 2<sup>nd</sup> DASFAA International Workshop on Social Networks and Social Media Mining on the Web (SNSMW), Hong Kong, April 2011.
- Parameter-Free Data Mining Techniques. 3<sup>rd</sup> Panhellenic Scientific Student Conference on Informatics, Related Technologies and Applications (**EUREKA**), Corfu, Greece, September 2009.

# Professional Service

#### Organizing Committee:

- 2017 Information Theory and Applications Workshop (ITA), San Diego, CA, 2017.
- Special Session on *Natural Language Processing for Social Media Analysis*, 19<sup>th</sup> International Conference on Speech and Computer (SPECOM), University of Hertfordshire, Hatfield, UK, 2017.
- 2<sup>nd</sup> International Workshop on Data Science for Social Media and Risk (SoMeRiS '16), IEEE International Conference on Data Mining (ICDM), Barcelona, Spain, 2016.

# Program Committee Member:

- 32<sup>nd</sup> AAAI Conference on Artificial Intelligence (AAAI), New Orleans, USA, 2018.
- 26<sup>th</sup> International Joint Conference on Artificial Intelligence (IJCAI), Melbourne, Australia, 2017.
- 31st AAAI Conference on Artificial Intelligence (AAAI), San Francisco, California, 2017.
- 8<sup>th</sup> International Workshop on Data Engineering meets the Semantic Web (DESWeb), IEEE International Conference on Data Engineering (ICDE), San Diego, CA, 2017.
- 19<sup>th</sup> International Conference on Speech and Computer (SPECOM), University of Hertfordshire, Hatfield, UK, 2017.
- Big Network Analytics Workshop (BigNet), 25<sup>th</sup> ACM International Conference on Information and Knowledge Management (CIKM), Indianapolis, USA, 2016.
- The 7<sup>th</sup> International Conference on Emerging Ubiquitous Systems and Pervasive Networks (EUSPN), Big Data and Big Data Science track, London, United Kingdom, 2016.
- Social Media and Risk Workshop (SoMeRiS), IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining (ASONAM), Paris, France, 2015.

# External reviewer for:

- ACM International Conference on Information and Knowledge Management (CIKM): 2016
- AAAI Conference on Artificial Intelligence (AAAI): 2015
- ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD): 2011, 2013, 2014
- International Symposium on Experimental Algorithms (SEA): 2013
- International World Wide Web Conference (WWW): 2013, 2014
- European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML-PKDD): 2012, 2013, 2014
- IEEE/ACM Int. Conference on Advances in Social Networks Analysis and Mining (ASONAM): 2012, 2014
- SIAM International Conference on Data Mining (SDM): 2012

#### Journal referee for:

- ACM Transactions on Knowledge Discovery from Data (TKDD): 2012, 2016, 2017
- IEEE Transactions on Knowledge and Data Engineering (TKDE): 2012, 2014, 2015, 2016
- Computer Vision and Image Understanding (CVIU), Elsevier: 2017
- Data Mining and Knowledge Discovery (DAMI): 2014, 2015
- Social Network Analysis and Mining (SNAM): 2015
- Physics Letters A (Elsevier): 2014
- IEEE Internet Computing (Special Issue on Web and Social Graph Mining): 2014
- Intelligent Data Analysis An International Journal (IDA): 2012, 2013
- Information Retrieval (Springer): 2011
- Pattern Recognition (Elsevier): 2010

# Event organization:

Participation in the organization of the Computer Science Laboratory (LIX) Colloquium on Data Science, École Polytechnique, Palaiseau, November 28, 2014.
 (Webpage: http://www.lix.polytechnique.fr/dascim/colloquium2014/).

• Participation in the organization of the *Data Science in the Big Data Era (DSBDE) Workshop*, Paris, July 17, 2013. (Webpage: http://www.lix.polytechnique.fr/dascim/dsbde/).

ADDITIONAL
PROFESSIONAL
EXPERIENCE

Member of the Technical Chamber of Greece

LANGUAGES

Greek (Native); English; French (Beginner)

PERSONAL
INTERESTS

Playing football and basketball, biking, hiking, dancing
Last modified: Sept 16, 2018