

# PANAGIOTIS SYMEONIDIS



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## SHORT BIO

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Panagiotis Symeonidis is Associate Professor at the School of Information and Communication Systems Engineering of the Aegean University, Greece from November 2020. Before, he was Assistant Professor at the Faculty of Computer Science (scientific sector INF/01) of the Free University of Bolzano, Italy, from November 2016 till November 2020. Before moving to Bolzano, he worked for 8 years as Adjunct Assistant Professor at the Department of Informatics of the Aristotle University of Thessaloniki, Greece. He received a B.Sc. degree in Applied Informatics from University of Macedonia at Thessaloniki in 1996. He also received a M.Sc. degree in Information Systems from the same university in 2004. He received his Ph.D. in Web Mining and Information Retrieval for Personalization from the Department of Informatics of the Aristotle University of Thessaloniki in 2008. His research interests include web mining (usage mining, content mining and graph mining), information retrieval, personalized health, recommender systems, and social media analytics. He is co-author of 3 international books, 2 Greek books (one under publication for Kallipos), 6 book chapters, 29 journal publications and 43 conference/workshop publications. His published papers have received **more than 3400 citations** and has an **h-index = 30**, according to Google Scholar. In 2017, he was recognized from AMiner among the Most Influential Researchers <https://www.aminer.cn/ai10/recommendation> of the last decade to the field of Recommender Systems. Two out of three of his journal publications were published in top-tier or highly ranked journals. One out of three of his conference publications have been published in top-tier or highly ranked conferences.

### Vision

My vision for the next couple of years is to combine social media or medical data, and deep learning algorithms together with recommender systems, to apply them in domains such as Personalized Health, and Social Media Analytics, where the main problems are the “curse” of dimensionality and the need for real-time predictions along with explanations.

## EDUCATION

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<b>PhD</b>	Aristotle University of Thessaloniki, Greece, Computer Science Thesis: “Data Mining for Web Personalization” Supervisor: Yannis Manolopoulos	<b>June 2008</b>
<b>MS</b>	University of Macedonia, Thessaloniki, Greece, Information Systems Thesis: “A Content-based Management System for Web” Advisor: Konstantinos Tarabanis	<b>May 2004</b>
<b>BS</b>	University of Macedonia, Greece, Applied Informatics (Grade 7,45/10)	<b>May 1996</b>

- Among the 2% of the top scientists in the world for year 2020** **2021**  
I was included in the 2% of the world's top scientists according to the citations that their research work received in the year 2020  
Source: Baas, J.; Boyack, K.; Ioannidis, J. (2021), "August 2021 data-update for "Updated science-wide author databases of standardized citation indicators", Mendeley Data, V3, doi:10.17632/btchxktzyw.3  
<https://elsevier.digitalcommonsdata.com/datasets/btchxktzyw/3>
- Among the 2% of the top scientists in the world for year 2019** **2020**  
I was included in the 2% of the world's top scientists according to the citations that their research work received in the year 2019  
Source: Ioannidis J., Boyack K., Baas J (2020) Updated science-wide author databases of standardized citation indicators. PLoS Biol 18(10): <https://doi.org/10.1371/journal.pbio.3000918>
- Three of my books made it to the 82 Best Recommender System Books of All Time** **2019**  
BookAuthority collects and ranks the best books in the world.  
<https://bookauthority.org/books/best-recommender-system-books>
- Most Influential Scholar Award (2007~2017)** **2018**  
I was recognized from AMiner among the Most Influential Researchers of the last decade to the field of Recommender Systems <https://www.aminer.cn/ai10/recommendation>
- Italian Habilitation** **2017**  
I got the Italian Habilitation Certificate in 2017, which makes me eligible to apply for any tenure track professorship position (in the level of Associate Professor) in Italy for the research domain 01/B1 informatics.
- Greek State Scholarship** **2013**  
4-month scholarship from the Greek Scholarship Foundation (IKY) for post-doctoral research in Magdeburg University with subject "Recommender Systems in multi-dimensional Social Networks"
- German State Scholarship** **2012**  
4-month scholarship from the German Scholarship Foundation (DAAD) for post-doctoral research in Magdeburg University with subject "Recommender Systems in time evolving Social Networks"
- Aristotle University Scholarship** **2010**  
1-year scholarship to perform research at the Aristotle University of Thessaloniki, Greece
- Greek State Scholarship** **2005**  
3-year scholarship for Ph.D. studies from the Greek Scholarship Foundation (IKY)
- Innovative Business Plan Award** **2008**  
Award for an Innovative Business Plan by the "Innovative Ideas Contest" of Central Macedonia, Greece for the research proposal "IPTV Explain: Providing Explained Recommendations for Digital Content"

## ADMINISTRATIVE EXPERIENCE

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### Director and Chief Executive

19/08/2011 - 31/07/2015

Head of the 1st Laboratory Center of Stavroupoli Thessaloniki  
1st EK Stavroupolis  
Thrakis 4, 56430 Thessaloniki (Greece)

## RESEARCH EXPERIENCE

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### University of the Aegean, Greece

2021 – 2022

- Submitted proposal to the call “HORIZON-HLTH-2022-TOOL-12-two-stage” with title “Personalized AI-based Treatment for patIEnts with coroNary arTery disease” (Acronym: Patient) with 7 other organizations and 3 hospitals (PANEPISTIMIAKO GENIKO NOSOKOMEIO IRAKLEIOU, HUMANITAS MIRASOLE SPA, and LIETUVOS SVEIKATOS MOKSLU UNIVERSITETO LIGONINE KAUNO KLINIKOS)

### Free University of Bolzano, Italy

2016 – 2021

- 2019-2020: HealthExplAI – Explainable AI for Health. – Development of a Drug Recommender System for Accurate and Explainable medical Decisions, Total budget of the project: €5000 (role:PI)
- 2018-2020: RecTV – Recommender for TV Shows in collaboration with KIM -Keep in Mind Srl. total budget of the project: €10.000 (role: PI)
- 2018-2019: MediaRec - News Recommendation based on heterogeneous and dynamic data from social media. total budget of the project: €5.000 (Role:PI)
- 2018-2020: ONCOnet2 - Piattaforma modulare per la gestione territoriale “Simultaneous Care” del paziente oncologico – total budget of the project €25.000 (role: co-PI)
- 2017-2021: DSSApple - Development of a decision support system for the determination of postharvest disorders and diseases of apples. total budget of the project €192.500
- 1/6/2017-1/6/2018: IMPRESS - Improving the Quality of Recommender Systems– total budget of the project €9.996

### Aristotle University of Thessaloniki, Greece

2007 - 2013

- 1/4/2012 – 31/5/2013: Bilateral Greek–Turkey project (10.000 €) with subject “Data mining for social web”
- 1/1/2011 – 31/12/2012: Bilateral Greek-German project with the code name IKYDA 2011 (15.000 €) with subject “A recommendation Engine for social Web”
- 9/8/2010 – 31/5/2012: Initial Vocational Training of Leonardo Da Vinci project from EU (75.987 €) with the subject “Information Technology for touristic businesses in Europe”
- 1/5/2007 – 1 /12/2007: Development of a collaborative platform for targeted advertising to Internet users (5000€) project code 04VEN71 PAVE NE 2004 of the General Secretariat for Research and Technology of Greece

### **University of the Aegean, Greece**

**2020 -2022**

**Associate Professor**, Faculty of Information and Communication Systems Engineering

#### **Courses taught in academic years 2020-2021, 2021-2022**

- Data bases II (Autumn Semester)
- Object Oriented Programming with java (Autumn Semester)
- Information Retrieval (Spring Semester 2021)
- Intelligent Recommender Systems (Spring Semester 2022)
- Advanced Topics in Data bases and Data Structures (Spring Semester 2021)
- Semantic Web (Autumn Semester)
- Data Mining and Big Data (Autumn Semester)
- Internet Programming (Spring Semester 2022)

#### **Masters Students Advised**

- Stylianos Stasinou, thesis title: “Drug Recommendation by using Auxiliary Medical Data”, March 2022

### **Free University of Bolzano, Italy**

**2016 -2020**

**Assistant Professor**, Faculty of Computer Science

#### **Courses taught in academic years 2016-2017, 2017-2018, and 2018-2019**

- Internet and Mobile Services (44h Lectures), BS – Autumn Semester 2018
- Information Search and Retrieval (24h Exercises), MSc, Spring Semester 2018
- Data bases (48h Exercises), BSc – Autumn Semester 2017
- Internet and Mobile Services (24h Exercises), BSc – Spring Semester 2017
- Data bases (24h Exercises), BSc – Autumn Semester 2018

#### **Doctoral Students (co-supervising with Prof. Markus Zanker)**

- Ludovik Coba, thesis title: “Offline and Online Evaluation of Recommender Systems”
- ChemsEddine Berbague, thesis title: “Studying Novelty and Diversity in Recommender Systems (**co-supervisor with Prof. Hassina Seridi, Annaba University, Algeria**)”

#### **Masters Students Advised**

- Luca Belinazzi, thesis title: “Drug Recommendation by using Auxiliary Medical Data”, July 2021
- Dmitry Chaltcev, thesis title: “Session-based News Recommendation using Markov and Probabilistic Modelling”, July 2018
- Lidija Kirjackaja, thesis title: “Recommending News Using Graph-based Algorithms”, June 2018

**Courses taught in Academic years 2010-2011, 2011-2012, 2012-2013, 2013-2014, 2014-2015, 2015-2016**

- Databases for businesses at the Post Graduate Program of Departments of Informatics and Economics (Autumn Semester)
- Data Mining at the Post Graduate Program of the Departments of Informatics and Economics, Aristotle University of Thessaloniki (Spring Semester)

**Doctoral Students (co-supervisor with Prof. Yannis Manolopoulos)**

- Alexis Papadimitriou (5 common papers)  
Ph.D. Thesis: “Algorithms for Data Management and Data Knowledge Extraction in Graphs” (2012).
- Pavlos Kefalas (4 common papers)  
Ph.D. Thesis: “Recommendation Models for Big Spatio-Temporal Data” (2017).

**Masters Students Advised**

**A/A Student Name. Master Thesis Title, academic year**

- Stergios Xairistanidis, Beacommender: A Sensor-based Recommender System for Smart Phones, 2015-2016
- Malakoudis Dimitrios, MOOC Recommendation through Enhanced Matrix Factorization Techniques, 2015-2016
- Georgia Papagianni, Recommendation Algorithms in Twitter, 2015-2016
- Evaggelia Theodoridou, Link Prediction in Social Networks with Graph Mining, 2015-2016
- Zioupos Andreas. Dimensionality Reduction in Social Networks, 2014-2015
- Aggeliki Mitsou, Effective Management of Waiting Lines for Banks: DoNotWait.gr Case Study, 2015-2016
- Mavromati Styliani. Anomaly Detection from Big and Open Data, 2014-2015
- Misirgi Eleni. Advertising and Cross-selling in Social Media, 2013-2014
- Nikopoulos Dimitris. Behavioural Analytics and Social Mining, 2013-2014
- Tsiptsas Naoum. Data Mining for Economic Crisis Detection, 2013-2014
- Dimitrios Ntempos. A Survey on Location-based Social Networks, 2012-2013
- Emmanouil Daskalakis. MapReduce for Recommender Systems, 2012-2013
- Antonios Krinis. Location-based Social Networks Website, 2011-2012
- Foivos Koliopoulos. Data Mining with SQL Server and R Environments, 2011-2012
- Athanasios Floros. A Recommendation Engine for Academic Jobs, 2011-2012
- Pantelis Logginidis. Data Mining for Business Intelligence, 2010-2011
- Christos Perentis. Link Prediction in Multi-Modal Social Networks, 2010-2011
- Ivaylo Kehayov. Text Data Mining, 2010-2011
- Nikolaos Mantas. Web Data Mining in Social Networks, 2009-2010

**Courses taught in Academic years** 2008-2009, 2009-2010, 2010-2011

- Databases (B.Sc., Autumn semester 2008)
- Internet Programming (B.Sc., Spring semester 2009)
- Advanced Databases (B.Sc., Autumn semester 2010)
- Advanced Software Engineering (B.Sc., Spring semester 2011)

**PUBLICATIONS**

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***Greek Textbooks***

1. Παναγιώτης Συμεωνίδης, «Ευφυή Συστήματα Συστάσεων», Αθήνα: Ελληνικά Ακαδημαϊκά Ηλεκτρονικά Συγγράμματα (υπό δημοσίευση που προγραμματίζεται για τις αρχές του 2023).
2. Παναγιώτης Συμεωνίδης, Γούναρης Αναστάσιος, “*Βάσεις Αποθήκες και Εξόρυξη Δεδομένων: Στο Εργαστήριο με τον SQL Server*” (Data bases, Data warehouses, and Data Mining with SQL Server) Αθήνα: Ελληνικά Ακαδημαϊκά Ηλεκτρονικά Συγγράμματα. Available to: <http://hdl.handle.net/11419/276>, ISBN: 978-960-603-021-5

***International Books/Monographs***

1. P. Symeonidis, A. Zioupos: “*Matrix and Tensor Factorization Techniques for Recommender Systems*”, Series: Springer Briefs in Computer Science, 2017, 102 pages, 29 b/w illustrations, 22 illustrations in colour, ISBN, 978-3-319-41356-3 DOI: 10.1007/978-3-319-41357-0
2. P. Symeonidis, D. Ntempos, Y. Manolopoulos: “*Recommender Systems for Location-based Social Networks*”, Series: Springer Briefs in Electrical and Computer Engineering, 2014, 118 pages, 41 illus., Softcover, ISBN 978-1-4939-0285-9
3. L. Balby Marinho, A. Hotho, R. Jäschke, A. Nanopoulos, S. Rendle, L. Schmidt-Thieme, G. Stumme, P. Symeonidis: “*Recommender Systems for Social Tagging Systems*”, Series: Springer Briefs in Electrical and Computer Engineering, 2012, 115 pages, 35 illus., Softcover, ISBN 978-1-4614-1893

***Journal Publications***

1. Zheng, Y., Chen, L., Zanker, M., Symeonidis, P.: JIIS preface for the special issue on advances in recommender systems. *Journal of Intelligent Information Systems (Springer)* 58(2): 223-225 (2022)
2. Symeonidis, P., Kirjackaja, L., Zanker, M. “Session-based News Recommendations using SimRank on multi-modal Graphs”, *Expert Systems with Applications (Elsevier)*, 2021 <https://doi.org/10.1016/j.eswa.2021.115028>
3. Berbague, C., Karabadjji, N., Seridi, H., Symeonidis, P., Manolopoulos, Y., Dhifli, W. “An

- overlapping clustering approach for precision, and novelty-aware recommendation”, *Expert Systems with Applications* (Elsevier) vol. 177, 2021
4. Makbule Gulcin Ozsoy, Diarmuid O'Reilly-Morgan, Panagiotis Symeonidis, Elias Z. Tragos, Neil Hurley, Barry Smyth, Aonghus Lawlor: MP4Rec: Explainable and Accurate Top-N Recommendations in Heterogeneous Information Networks. *IEEE Access* (8) pages: 181835-181847 (2020)
  5. Symeonidis, P., Kirjackaja, L., Zanker, M. “Session-aware news recommendations using random walks on time-evolving heterogeneous information networks”, *User Modelling and User-Adapted Interaction*, <https://doi.org/10.1007/s11257-020-09261-9>, 2020
  6. Coba, L., Symeonidis, P., & Zanker, M. “Personalised Novel and Explainable Matrix Factorization”. *Data & Knowledge Engineering* (Elsevier), vol. 122, pp. 142-158, <https://doi.org/10.1016/j.datak.2019.06.003>, 2019
  7. Symeonidis, P., Chairistanidis, S. (2019) “OmniRank: Learning to Recommend based on Omni-traversal of Heterogeneous Graphs”. *Social Network Analysis and Mining* (Springer), vol. 9, no. 1, pp=39-63, <https://doi.org/10.1007/s13278-019-0585-7>, 2019
  8. Coba, L., Symeonidis, P., & Zanker, M. (2019). “Counteracting the Filter Bubble in Recommender Systems: Novelty-aware Matrix Factorization”, *Intelligenza Artificiale* (IOS Press) vol. 13, no. 1, pp. 37-47, 2019
  9. Symeonidis, P., Coba, L., Zanker, M. “Improving Time-aware Recommendations in Open Source Packages”, *International Journal on Artificial Intelligence Tools, World Scientific*, vol. 28, no. 6., pp. 1-21. <http://dx.doi.org/10.1142/S0218213019600078>, 2019
  10. P. Symeonidis, D. Malakoudis: “Multi-Modal Matrix Factorization with Side Information for Recommending Massive Open Online Courses”, *Expert Systems with Applications*, Vol. 118, pp. 261 – 271, 2019
  11. P. Kefalas, P. Symeonidis, Y. Manolopoulos: “Recommendations Based on a Heterogeneous Spatio-temporal Social Network”, *World Wide Web*, Vol. 21, N. 2, pp. 345-371, 2017. **(Impact factor in 2017: 1.405)**
  12. P. Kefalas, P. Symeonidis, Y. Manolopoulos: “A Graph-based Taxonomy of Recommendation Algorithms and Systems in LBSNs”, *IEEE Transactions on Knowledge & Data Engineering*, Vol.28, N.3, pp. 604-622, 2016. **(Impact factor in 2016: 3.438)**
  13. P. Symeonidis: “ClustHOSVD: Item Recommendation by Combining Semantically-enhanced Tag Clustering with Tensor HOSVD”, *IEEE Transactions on Systems, Man & Cybernetics - Part A: Systems & Humans*, Vol. 46, No. 9, 2016. **(Impact factor in 2016: 2.350)**
  14. M. Sattari, I. Toroslu, P. Karagoz, P. Symeonidis, Y. Manolopoulos: “Extended Feature Combination Model for Recommendations in Location-based Mobile Services”, *Knowledge & Information Systems*, Vol.3, N.44, pp. 629-661, 2015. **(Impact factor in 2015: 1.702)**

15. Z.F. Siddiqui, E. Tiakas, P. Symeonidis, M. Spiliopoulou, Y. Manolopoulos: “Learning Relational User Profiles and Recommending Items as their Preferences Change”, *International Journal of AI Tools*, Vol.24, N.2, 2015. **(impact factor in 2015: 0.530)**
16. P. Symeonidis, E. Tiakas: “Transitive Node Similarity: Predicting and Recommending Links in Signed Social Networks”, *World Wide Web*, Vol.17, No.4, pp.743-776, 2014. **(impact factor in 2014: 1.474)**
17. P. Symeonidis, E. Tiakas, Y. Manolopoulos: “A Unified Framework for Link and Rating Prediction in Multi-modal Social Networks”, *International Journal of Social Network Mining*, Vol.1, No.3/4, 2013.
18. P. Symeonidis, N. Mantas: “Spectral Clustering for Link Prediction in Social Networks with Positive and Negative Links”, *Social Network Analysis & Mining*, Vol.3, No.4, pp.1433-1447, 2013. **(impact factor in 2013: 0.503)**
19. P. Symeonidis, N. Iakovidou, N. Mantas, Y. Manolopoulos: “From Biological to Social Networks: Link prediction based on Multi-way Spectral Clustering”, *Data & Knowledge Engineering*, Vol.87, pp.226-242, 2013. **(impact factor in 2013: 1.489)**
20. P. Longinidis, P. Symeonidis: “Corporate Dividend Policy Determinants: Intelligent versus a Traditional Approach”, *Intelligent Systems in Accounting, Finance & Management*, Vol.20, No.2, pp.111-139, 2013.
21. A. Papadimitriou, P. Symeonidis, Y. Manolopoulos: “Fast and Accurate Link Prediction in Social Networking Systems”, *Journal of Systems & Software*, Vol.85, No.9, pp.2119-2132, 2012. **(impact factor in 2012: 1.135)**
22. A. Papadimitriou, P. Symeonidis, Y. Manolopoulos: “A Generalized Taxonomy of Explanations Styles for Traditional and Social Recommender Systems”, *Data Mining & Knowledge Discovery*, pp.1-29, 2011. **(impact factor in 2011: 1.545)**
23. P. Symeonidis, A. Nanopoulos, Y. Manolopoulos: “A Unified Framework for Providing Recommendations in Social Tagging Systems Based on Ternary Semantic Analysis”, *IEEE Transactions on Knowledge & Data Engineering*, Vol.22, No.2, 2010. **(impact factor in 2010: 1.851)**
24. A. Nanopoulos, D. Rafailidis, P. Symeonidis, Y. Manolopoulos: “MusicBox: Personalized Music Recommendation based on Cubic Analysis of Social Tags”, *IEEE Transactions on Audio, Speech & Language Processing*, Vol.18, No.2, 2010. **(impact factor in 2010: 1.668)**
25. A. Deligiaouri, P. Symeonidis: “Skai (TV) - YouTube Debate”: A New Era of Internetized Television Politics”, *International Journal of E-Politics*, Vol.1, No.2, 2010 (publisher: IGI global).
26. P. Symeonidis, A. Deligiaouri: “Recommending Posts in Political Blogs based on Tensor Dimensionality Reduction”, *International Journal of Engineering Intelligent Systems*, Vol.17, No.2-3, 2009. **(impact factor in 2009: 0.205)**



27. P. Symeonidis, A. Nanopoulos, Y. Manolopoulos: “Providing Justifications in Recommender Systems”, *IEEE Transactions on Systems, Man & Cybernetics - Part A: Systems & Humans*, Vol.38, No.6, 2008. **(impact factor in 2008: 1.350)**
28. P. Symeonidis, A. Nanopoulos, A. Papadopoulos, Y. Manolopoulos: “Nearest-biclusters Collaborative Filtering with Constant and Coherent Values”, *Information Retrieval*, Vol.11, No.1, 2008. **(5-year impact factor in 2008: 1.396)**
29. P. Symeonidis, A. Nanopoulos, A. Papadopoulos, Y. Manolopoulos: “Collaborative Filtering Systems: Combining Effectiveness and Efficiency”, *Expert Systems with Applications*, Vol.34, No.4, pp.51-75, 2008. **(impact factor in 2008: 2.596)**

### ***Book Chapters***

1. G. Sottocornola, F. Stella, P. Symeonidis, M. Zanker, I. Krajger, R. Faullant, and E. Schwarz: Identifying Innovative Idea Proposals with Topic Models—A Case Study from SPA Tourism. In: Sigala M., Rahimi R., Thelwall M. (eds) *Big Data and Innovation in Tourism, Travel, and Hospitality*. Springer, Singapore, pp 115-133, 2019
2. P. Symeonidis, D. Malakoudis: “MooRec.com: Massive Open Online Courses Recommender System” chapter in the book entitled “*Collaborative Recommendations: Algorithms, Practical Challenges and Applications*”, World Scientific, pp. 627–651, 2018.
3. P. Symeonidis: “Matrix and Tensor Factorization in Recommender Systems”, chapter in the book entitled “*Graph-based Social Media Analysis*”, by I. Pitas (ed.), CRC Press, Taylor & Francis group, Chapman & Hall/CRC, pp. 187-210, 2015.
4. L. Marinho, A. Nanopoulos, L. Schmidt-Thieme, R. Jaschke, A. Hotho, G. Stumme, P. Symeonidis: “Social Tagging Recommender Systems”, chapter in book entitled “*Recommender Systems Handbook*”, by F. Ricci, L. Rokach, B. Shaphira, P. B. Kantor (eds.): LNCS Springer Book, pp.615-644, 2011.
5. A. Deligiaouri, P. Symeonidis: “Internetized Television Debates: Enhancing Citizens’ Participation”, chapter in book entitled “*E-Politics and Organizational Implications of the Internet: Power, Influence and Social Change*” by C.R. Livermore (ed.), IGI Global, 2011.
6. P. Symeonidis, A. Nanopoulos, A. Papadopoulos, Y. Manolopoulos: “Nearest-biclusters Collaborative Filtering based on constant values”, chapter in book entitled “*Advances in Web Mining and Web Usage Analysis*”, by O. Nasraoui, O. Zaiane, M. Spiliopoulou, M. Mobasher, B. Masand, P. Yu (eds.), LNCS Springer, Vol.4811, pp.36-55, 2007.

### ***Conference Papers***

1. Panagiotis Symeonidis, Stergios Chairistanidis, Markus Zanker: Recommending What Drug to Prescribe Next for Accurate and Explainable Medical Decisions. *IEEE Computer-based Medical Systems (IEEE CBMS 2021)*: 213-218

2. Panagiotis Symeonidis, Christos Andras, Markus Zanker: Treatment Recommendations for COVID-19 Patients along with Robust Explanations. *IEEE Computer-based Medical Systems (IEEE CBMS 2021)* 2021: 207-212
3. Panagiotis Symeonidis, Dmitry Chaltsev, Markus Zanker, Yannis Manolopoulos: News Recommendations by Combining Intra-session with Inter-session and Content-Based Probabilistic Modelling. *International Conference on Computational Collective Intelligence (ICCCI 2021)*: 154-166
4. Panagiotis Symeonidis: Similarity Search, Recommendation and Explainability over Graphs in Different Domains: Social Media, News, and Health Industry. *IEEE International Conference on Web Engineering (IEEE ICWE 2021)*: 537-541, 2020
5. Panagiotis Symeonidis, Andrea Janes, Dmitry Chaltsev, Philip Giuliani, Daniel Morandini, Andreas Unterhuber, Ludovik Coba, Markus Zanker: Recommending the Video to Watch Next: An Offline and Online Evaluation at YOUTV.de. *ACM Recommender Systems Conference (RecSys 2020)*: 299-308
6. Duriakova, E., Tragos, E., Smyth, B., Hurley, N., Peña, F., Symeonidis, P., Geraci, J., & Lawlor, A.: “PDMFRec: A Decentralised Matrix Factorisation with Tunable User-centric Privacy”, *Proceedings of the 13th International Conference on Recommender Systems (RecSys) (16-20 September 2019)*, Copenhagen, Denmark
7. L. Coba, M. Zanker, L. Rook, P. Symeonidis: “Decision Making Strategies Differ in the Presence of Collaborative Explanations: Two Conjoint Studies” *Proceedings of the 24<sup>th</sup> International Conference on Intelligent User Interfaces*, pp. 291-306, Marina del Ray, Los Angeles, CA, USA, 2019.
8. G. Sottocornola, P. Symeonidis, M. Zanker: “Session-based News Recommendations”, *Companion Proceedings of The World Wide Web Conference (WWW)*, pp. 1395-1399, Lyon, France, 2018.
9. L. Çoba, P. Symeonidis, M. Zanker: “Replicating and Improving Top-N Recommendations in Open Source Packages”, *Proceedings of the 8<sup>th</sup> International Conference on Web Intelligence, Mining and Semantics (WIMS)*, Novi Sad, Serbia, 2018.
10. L. Coba, M. Zanker, L. Rook, P. Symeonidis: “Exploring Users’ Perception of Collaborative Explanations”, *Proceeding of the International Conference of Business Informatics (CBI 2019)*, Vienna, Austria, 2018.
11. L. Coba, M. Zanker, L. Rook, P. Symeonidis: “Exploring Users’ Perception of Rating Summary Statistics”, *Proceedings of the 26<sup>th</sup> Conference on User Modelling, Adaptation and Personalization (UMAP)*, 2018.
12. L. Çoba, P. Symeonidis, M. Zanker: “Reproducing and Prototyping Recommender Systems in R”, *Proceedings of the 8<sup>th</sup> Italian Information Retrieval Workshop*, 2017

13. L. Çoba, P. Symeonidis, M. Zanker: “Visual Analysis of Recommendation Performance”, *Proceedings of the 11<sup>th</sup> ACM Conference on Recommender Systems (RecSys)*, pp.362-363, 2017.
14. P Symeonidis, S Chairistanidis: “CheckInShop.eu: A Sensor-based Recommender System for micro-location Marketing”, *Proceedings of the 11<sup>th</sup> ACM Conference on Recommender Systems (RecSys)*, pp.351-352, 2017
15. P. Symeonidis: “Matrix and Tensor Decomposition in Recommender Systems”, Tutorial Presentation at ACM RecSys'2016 conference, Boston, 2016.
16. P. Kefalas, P. Symeonidis: “Recommending Friends and Locations over a Heterogeneous Spatio-temporal Graph”, *Proceedings of the 5<sup>th</sup> International Conference on Model & Data Engineering (MEDI)*, pp. 271-284, Island of Rhodes, Greece, 2015.
17. P. Symeonidis, C. Perentis: “Link Prediction in Multi-modal Social Networks”, *Proceedings of the International Conference on Machine Learning & Knowledge Discovery in Databases (ECML/PKDD)*, pp. 147-162, Nancy France, 2014
18. Z.F. Siddiqui, E. Tiakas, P. Symeonidis, M. Spiliopoulou, Y. Manolopoulos: “xStreams: Providing Item Recommendations to Users with Time-evolving Preferences”, *Proceedings of the 4<sup>th</sup> International Conference on Web Intelligence, Mining & Semantics (WIMS)*, Thessaloniki, Greece, 2014.
19. P. Kefalas, P. Symeonidis, Y. Manolopoulos: “New Perspectives for Recommendations in Location-based Social Networks: Time, Privacy and Explainability”, *Proceedings of the 5<sup>th</sup> International Conference on Management of Emergent Digital Eco Systems (MEDES)*, pp.1-8, Neumuenster Abbey, Luxembourg, 2013.
20. P. Symeonidis, A. Krinis, Y. Manolopoulos: “GeoSocialRec: Explaining Recommendations in Location-based Social Networks”, *Proceedings of the 17<sup>th</sup> East-European Conference on Advanced Databases & Information Systems (ADBIS)*, pp. 84-97, Genova, Italy, 2013.
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23. A. Papadimitriou, P. Symeonidis, Y. Manolopoulos: “Scalable Link Prediction in Social Networks based on Local Graph Characteristics”, *Proceedings of the 9<sup>th</sup> International Conference on Information Technology: New Generations (ITNG)*, Las Vegas, NV, 2012
24. P. Symeonidis, E. Tiakas, Y. Manolopoulos: “Product Recommendation and Rating Prediction based on Multi-modal Social Networks”, *Proceedings of the 5<sup>th</sup> ACM Conference in Recommender Systems (RecSys)*, Chicago, IL, 2011.

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26. A. Papadimitriou, P. Symeonidis, Y. Manolopoulos: “Geo-social Recommendations”, *Proceedings of the RecSys Workshop Personalization on Mobile Applications (PeMA)*, Chicago, Illinois, 2011.
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28. Z.F. Siddiqui, M. Spiliopoulou, P. Symeonidis, E. Tiakas: “A Data Generator for Multi-Stream Data”, *Proceedings of the PKDD Workshop Mining Ubiquitous & Social Environments (MUSE)*, Athens, Greece, 2011
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30. P. Symeonidis, E. Tiakas, Y. Manolopoulos: “Transitive Node similarity for Link Prediction in Social Networks with positive and negative links”, *Proceedings of the 4<sup>th</sup> ACM Conference in Recommender Systems (RecSys)*, pp.183-190, Barcelona, 2010.
31. N. Iakovidou, P. Symeonidis, Y. Manolopoulos: “Multiway Spectral Clustering Link Prediction in Protein-Protein Interaction Networks”, *Proceedings of the 10<sup>th</sup> IEEE International Conference on Information Technology & Applications in Biomedicine (ITAB)*, Corfu, 2010.
32. P. Symeonidis, A. Nanopoulos, Y. Manolopoulos: “MoviExplain: a Recommender Agent Providing Justified Recommendations”, *Proceedings of the 3<sup>rd</sup> ACM Conference in Recommender Systems (RecSys)*, New York, 2009.
33. P. Symeonidis: “User Recommendations based on Tensor Dimensionality Reduction”, *Proceedings of the 5<sup>th</sup> IFIP Conference on Artificial Intelligence Applications & Innovations (AIAI)*, pp.331-341, Thessaloniki, Greece, 2009.
34. P. Symeonidis, A. Nanopoulos, Y. Manolopoulos: “Tag Recommendations based on Tensor Dimensionality Reduction”, *Proceedings of the 2<sup>nd</sup> ACM Conference in Recommender Systems (RecSys)*, pp.43-50, Lausanne, 2008.
35. P. Symeonidis, A. Nanopoulos, Y. Manolopoulos: “Justified Recommendations based on Content and Rating Data”, *Proceedings of the 10<sup>th</sup> WebKDD Workshop in conjunction with KDD Conference*, Las Vegas, NV, 2008.
36. P. Symeonidis, M. Ruxanda, A. Nanopoulos, Y. Manolopoulos: “Ternary Semantic Analysis of Social Tags for Personalized Music Recommendation”, *Proceedings of the 9<sup>th</sup> Annual Conference on Music*

*Information Retrieval (ISMIR)*, pp.219-224, Philadelphia, 2008

37. P. Symeonidis: “Content-based Dimensionality Reduction for Recommender Systems”, *Proceedings of the 31<sup>st</sup> Annual Conference of the German Classification Society (GfKI)*, Freiburg, Germany, 2007.
38. P. Symeonidis, A. Nanopoulos, A. Papadopoulos, Y. Manolopoulos: “Feature-weighted User Model for Recommender Systems”, *Proceedings of the 11<sup>th</sup> International Conference on User Modelling (UM)*, Vol.4511, pp.97-106, Corfu, Greece, 2007.
39. P. Symeonidis, A. Nanopoulos, A. Papadopoulos, Y. Manolopoulos: “Collaborative Filtering: Fallacies and Insights in Measuring Similarity”, *Proceedings of the Web Mining Workshop held in conjunction with PKDD/ECML conference*, pp.56-67, Berlin, Germany, 2006.
40. P. Symeonidis, A. Nanopoulos, A. Papadopoulos, Y. Manolopoulos: “Nearest-Biclusters Collaborative Filtering”, *Proceedings of the WebKDD Workshop held in conjunction with KDD*, pp.15-25, Philadelphia, PA, 2006.
41. P. Symeonidis, A. Nanopoulos, A. Papadopoulos, Y. Manolopoulos: “Collaborative Filtering based on Users Trends”, *Proceedings of the 30<sup>th</sup> Annual Conference of the German Classification Society (GfKI)*, pp.375-382, Berlin, Germany, 2006.
42. P. Symeonidis, A. Nanopoulos, A. Papadopoulos, Y. Manolopoulos: “Collaborative Filtering Process in a Whole New Light”, *Proceedings of the 10<sup>th</sup> International Symposium on Data Engineering & Applications (IDEAS)*, pp.29-36, Delhi, India, 2006.
43. P. Symeonidis, A. Nanopoulos, A. Papadopoulos, Y. Manolopoulos: “Scalable Collaborative Filtering Based on Latent Semantic Indexing”, *Proceedings of the AAAI Workshop on Intelligent Techniques for Web Personalization (ITWP)*, pp.1-9, Boston, MA, 2006.

#### **JOURNAL AND CONFERENCES QUALITY INDICES OF THE PUBLISHED WORK**

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P. Symeonidis has published 29 papers in journals and the Table below presents the Impact Factor of the Journal in the year that his paper got accepted from the journal. As shown, there are 20 out the 29 journal papers, with an impact factor more than 1.134.

	<b>Journal Title</b>	<b>Impact Factor</b>
1	Expert Systems with Applications 2019	<b>5.835</b>
2	Expert Systems with Applications (Elsevier) 2019	<b>5.835</b>
3	User Modelling and User-Adapted Interaction, 2020	<b>4.412</b>
4	IEEE Access, 2020	<b>4.34</b>
5	IEEE Transactions on Knowledge and Data Engineering (2016)	<b>3.438</b>
6	Expert Systems with Applications (Elsevier) 2008	<b>2.596</b>
7	IEEE Transactions on System, Man and Cybernetics: Part A (2016)	<b>2.350</b>

8	Data & Knowledge Engineering (Elsevier) 2019	<b>2.553</b>
9	Social Network Analysis and Mining (Springer) 2019	<b>2.63</b>
10	Expert Systems with Applications (Elsevier) 2021	<b>2,070</b>
11	Expert Systems with Applications (Elsevier) 2021	<b>2,070</b>
12	IEEE Transactions on Knowledge and Data Engineering (2010)	<b>1.851</b>
13	Knowledge and Information Systems (Springer) 2015	<b>1.702</b>
14	IEEE Transactions on Speech and Language Processing (2010)	<b>1.668</b>
15	Data Mining and Knowledge Discovery (Springer) 2011	<b>1.545</b>
16	Data and Knowledge Engineering (Elsevier) 2013	<b>1.489</b>
17	World Wide Web Journal (Springer) 2014	<b>1.474</b>
18	World Wide Web Journal (Springer) 2017	<b>1.405</b>
19	Information Retrieval (Springer) 2007	<b>1.396</b>
20	IEEE Transactions on System, Man and Cybernetics: Part A (2008)	<b>1.350</b>
21	Journal of Systems & Software (Elsevier) 2012	<b>1.135</b>
22	International Journal of AI Tools 2015	<b>0.530</b>
23	Social Network Analysis and Mining (Springer) 2013	<b>0.503</b>
24	Engineering Intelligent Systems (CRL)	<b>0.205</b>
25	Intelligent Systems in Accounting, Finance & Management	N/A
26	International Journal of E-politics	N/A
27	International Journal of Social Network Mining	N/A
28	Journal of Intelligent Information Systems (Springer) 2022	N/A
29	Intelligenza Artificiale (IOS Press) 2019	N/A

Finally, summarizing the quality of the published work of P. Symeonidis in conferences, as shown in the Table below, he has published 4 papers in **Top-ranked** conferences (acceptance rate  $\leq 20\%$ ) and 8 papers in **Highly-ranked** conferences (acceptance rate  $\leq 40\%$ ), where «acceptance rate» is the ratio of the accepted papers of a conference to the total number of papers that are submitted in a year.

<b>Conference</b>	<b>Acceptance Ratio</b>
ACM RecSys 2020	18%
ACM RecSys 2019	19%
ACM RecSys 2009	19%
ACM RecSys 2010	19%
ACM RecSys 2011	20%
User Modelling 2007	20%
ECML/PKDD 2014	22%
IUI 2019	23%
ADBIS 2012	26%
IEEE IDEAS 2006	26%
ADBIS 2013	28%
ACM RecSys 2008	30%
ACM SIGSPATIAL 2011 (LBSN workshop)	38%
ACM RecSys 2016 (tutorial presentation)	40%
ACM KDD 2006 (WebKDD workshop)	40%

## **PRESENTATIONS, TUTORIALS, INVITED LECTURES AND WORKSHOP CO-ORGANIZER**

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1. Tutorial in IEEE ICWE 2021. Title "Similarity Search, Recommendation and Explainability over Graphs in Different Domains: Social Media, News, and Health Industry"  
<https://icwe2021.webengineering.org/>.
2. Publicity chair of ACM RecSys 2020, which was held in Rio de Janeiro, Brazil, 22nd-26th September 2020.
3. Co-chair of the SAC 2019 Technical Track on Recommender Systems: Theory, User Interactions and Applications.
4. Tutorial in WIMS conference 2018. Title: Contextual-Aware Recommender Systems based on Matrix Decompositions and Random Walks on Graphs.
5. Tutorial in ACM Summer School on Recommender Systems from 21/8/2017-25/8/2017 in Bolzano. Title: Matrix and Tensor Factorization Techniques for Recommender Systems.
6. Tutorial in Professional Technical School of Bolzano "Landesberufsschule für Handwerk und Industrie" for the "Tag der offenen Tür" (contact person: Kuen, Thomas, informatik), 2017.
7. Tutorial in ACM Conference on Recommender Systems in Boston, September 2016. Title: Matrix and Tensor Decompositions for Recommender Systems.
8. GIS and location-based services - 9<sup>th</sup> workshop "Computer Science Research Meets Business" - 23 Nov 2017. Title: CheckInShop: A Recommender System for Micro-location Services.

## **ENTREPRENEURSHIP & PATENTS**

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### **Co-founder of the following start-ups:**

- [www.moorec.com](http://www.moorec.com)  
This is a website for recommending moocs (massive open online courses) to users based on their CV and their ideal job description.
- [www.checkinexpo.com](http://www.checkinexpo.com) (not active anymore)  
This is a website for shops to provide "proximity and contextual marketing" to their smart-phone clients inside their physical store by using beacon technology.

### **Co-creator of the following web systems:**

1. <http://drugrec.inf.unibz.it>  
drugrec is a website that provides treatment recommendations of Covid-19 patients along with explanations.
2. <https://cran.r-project.org/web/packages/rrecsys/index.html>  
rrecsys is an open source library in R to evaluate several recommendation algorithms using time-

- dependent and time-independent evaluation protocols.
3. <http://metarec.inf.unibz.it>  
A recommender system for graph-based recommendations and meta-path based explanations.
  4. <http://jobrec.inf.unibz.it>  
A job recommendation system (in greek)
  5. <http://adsrec.inf.unibz.it>  
A news web site with advertisement recommendations (in greek)
  6. <https://skillrec.inf.unibz.it>  
A project recommendation website based on the skills of the researchers

## COMMUNITY SERVICE

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### **Editorial Board and Committee memberships in journals/conferences:**

1. Member of the editorial board of the international journal Information Technology & Tourism (Springer)
2. Member of the Editorial Board of the international journal of Intelligent Information Systems (Springer)
3. Senior Program Committee member of the Recommender System (RecSys) conference
4. Senior Program Committee member of the International Joint Conference in Artificial Intelligence (IJCAI)
5. Member of the Program Committee of the WWW conference, track on User Modelling, Recommendation and Personalization
6. Member of the Program Committee of the ECML PKDD conference
7. Member of the Program Committee of the East-European Conference on Advances in Databases and Information Systems (ADBIS)

### **Reviewer in journals/conferences**

1. ACM Transactions on Recommender Systems (ACM TORS)
2. ACM Transactions on Internet Technology (ACM TOIT)
3. ACM Transactions on Intelligent Systems and Technology (ACM TIST)
4. ACM Transactions on the Web (ACM TWEB)
5. IEEE Transactions on Knowledge Discovery & Engineering (IEEE TKDE)
6. IEEE Transactions on System, Man & Cybernetics
7. The Computer Journal (Oxford Journals)
8. Information Systems (ELSEVIER)
9. Operational Research: An International Journal
10. European Conference on Machine Learning and Principles & Practice of Knowledge Discovery in Databases (ECML/PKDD)
11. International Conference on Very Large Data Bases (VLDB)
12. International Conference on Knowledge Discovery from Databases (Workshop on Social Network Analysis - SNAKDD)



### 13. International Conference on Artificial Neural Networks (ICANN)

#### **LANGUAGES**

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- **English:** Excellent, C2 Level
- **German:** Advanced, C1 Level
- **Italian:** Fluent, B1 level
- **Greek:** (mother tongue)