DMITRY BOGDANOV

Music Technology Group
Departament de Tecnologies de la Informació i les Comunicacions
Universitat Pompeu Fabra

Roc Boronat, 138
08018 Barcelona
Phone. (+34) 935422176
Mobile: (+34) 697850731
dmitry.bogdanov@upf.edu

ACADEMIC BACKGROUND

2001-2006	**Diploma in Applied Mathematics and Informatics** at **Moscow State University**, Faculty of Computational Mathematics and Cybernetics (CMC MSU). Specialization in Software for Computers.
2008-2013	**PhD in Information, Communication and Audiovisual Technologies / Sound and Music Computing** at **Pompeu Fabra University**, Department of Information and Communication Technologies. Thesis title: *"From music similarity to music recommendation: Computational approaches based on audio feature and metadata"*.

PROFESSIONAL EXPERIENCE

Sep 2003 - May 2007	Researcher and developer at Computing Systems Laboratory, CMC, Moscow State University.
May 2007 - Nov 2007 Jan 2008 Aug 2008 - Now	Researcher at Music Technology Group, Pompeu Fabra Universtiy, Barcelona.

FINANCED R&D PROJECTS

2007 - 2008	Pharos (Platform for searcH of Audiovisual Resources across Online Spaces, IST, European Comission, IST-2006-045035). Researcher.
2004 - 2007	Nevod, Monitoring-RVS, Monitoring-RVS-I (Intelligent methods of intrusion detection). Researcher and developer.

SOFTWARE DEVELOPMENT EXPERIENCE

Key skills:

- Python, C++, C, shell scripting, web services
- development platforms: mainly Linux
- version control: Git
- javascript, jQuery, HTML/CSS
- solid theoretical background in computer science
- highly motivated, ability to learn rapidly

Sep 2003 - May 2007	Developer of a distributed network monitoring system for intrusion detection. Monitoring of network traffic for prediction of abnormal behavior. Tools: Linux (Debian/Red Hat), C++, shell scripting, CVS, SVN.
2007 - Jun 2012	Python/shell scripting for the goals of my PhD thesis. Use of Essentia/Gaia audio analysis library (including beta testing). Web programming in Python, HTML/CSS, javascript, processingjs, jQuery, web APIs. Mobile development (Java Android SDK).
Jul 2012 - Now	Main developer of Essentia/Gaia C++ library for audio analysis. Predominant melody detection and beat tracking algorithms, management and documentation of the project.

ACADEMIC PUBLICATIONS

Journals

- Bogdanov, D., Haro M., Fuhrmann F., Xambó A., Gómez E., & Herrera P. (2013). Semantic audio content-based music recommendation and visualization based on user preference examples. Information Processing & Management.
- Bogdanov, D., Serrà J., Wack N., Herrera P., & Serra X. (2011). Unifying Low-level and High-level Music Similarity Measures. IEEE Transactions on Multimedia. 13(4), 687-701.

Conference proceedings (peer-reviewed)

- Bogdanov, D., Wack N., Gómez E., Gulati S., Herrera P., Mayor O., Roma G., Salamon J., Zapata J., & Serra X. (2013). ESSENTIA: an open-source library for sound and music analysis. ACM International Conference on Multimedia (MM'13).
- Bogdanov, D., Wack N., Gómez E., Gulati S., Herrera P., Mayor O., Roma G., Salamon J., Zapata J., & Serra X. (2013). ESSENTIA: an audio analysis library for music information retrieval. International Society for Music Information Retrieval Conference (ISMIR).
- Bogdanov, D., & Herrera P. (2012). Taking Advantage of Editorial Metadata to Recommend Music. 9th International Symposium on Computer Music Modeling and Retrieval (CMMR).
- Bogdanov, D., & Herrera P. (2011). How much metadata do we need in music recommendation? A subjective evaluation using preference sets. International Society for Music Information Retrieval Conference (ISMIR).
- Bogdanov, D., Haro M., Fuhrmann F., Xambó A., Gómez E., & Herrera P. (2011). A Content-based System for Music Recommendation and Visualization of User Preferences Working on Semantic Notions. 9th International Workshop on Content-based Multimedia Indexing.
- Bogdanov, D., Haro M., Fuhrmann F., Gómez E., & Herrera P. (2010). Content-based music recommendation based on user preference examples. The 4th ACM Conference on Recommender Systems. Workshop on Music Recommendation and Discovery (Womrad 2010).
- Bogdanov, D., Serrà, J., Wack, N., Herrera, P. (2009). From Low-level to High-level: Comparative study of music similarity measures. IEEE International Symposium on Multimedia. International Workshop on Advances in Music Information Research (AdMIRe).
- Yang, Y., Bogdanov D., Perfecto H., & Sordo M. (2012). Music Retagging Using Label Propagation and Robust Principal Component Analysis. 21st International World Wide Web Conference (WWW 2012): 4th International Workshop on Advances in Music Information Research (AdMIRe 2012).
- Haro, M., Xambó A., Fuhrmann F., Bogdanov D., Gómez E., & Herrera P. (2010). The Musical Avatar – A visualization of musical preferences by means of audio content description. 5th Audio Mostly Conference: A Conference on Interaction with Sound.

Other publications

- Sordo, M., Celma Ò., & Bogdanov D. (2011). Audio Tag Classification using Weighted-Vote Nearest Neighbor Classification. Music Information Retrieval Evaluation eXchange (MIREX) extended abstract.
- Bogdanov, D., Serrà J., Wack N., & Herrera P. (2010). Hybrid Music Similarity Measure. Music Information Retrieval Evaluation eXchange (MIREX) extended abstract.
- Wack, N., Laurier C., Meyers O., Marxer R., Bogdanov D., Serrà J., et al. (2010). Music classification using high-level models. Music Information Retrieval Evaluation eXchange (MIREX) extended abstract.
- Bogdanov, D., Serrà J., Wack N., & Herrera P. (2009). Hybrid Similarity Measures For Music Recommendation. Music Information Retrieval Evaluation eXchange (MIREX) extended abstract.
- Wack, N., Guaus E., Laurier C., Meyers O., Marxer R., Bogdanov D., et al. (2009). Music type groupers (MTG): generic music classification algorithms. Music Information Retrieval Evaluation eXchange (MIREX) extended abstract.

Demos:

- My Musical Avatar. 9th International Workshop on Content-based Multimedia Indexing. 2011.
- My Musical Avatar. Fira Recerca en Directe. Barcelona. 2012.

Invited talks:

- The Musical Avatar. Escola Superior de Música de Catalunya, Seminaris de Sonologia. 07-11-2011.

RESEARCH INTERESTS

Music information retrieval, sound and music computing, sound analysis, music recommendation, user modeling, machine learning, data mining, personalization.

SCIENTIFIC SERVICES

Guest reviewer for journals:

- International Journal of Multimedia Information Retrieval (Springer)
- Journal of Intelligent Information Systems (Springer)

Reviewer for conferences:

- 7th Sound and Music Computing Conference, 2010
- 8th Sound and Music Computing Conference, 2011
- 9th Sound and Music Computing Conference, 2012
- 13th International Society for Music Information Retrieval Conference, 2012

Member of program committe:

- 4th International Workshop on Advances in Music Information Research, 2012

TEACHING EXPERIENCE

Sep 2006 — May 2007	Algorithms and algorithmic languages. Moscow State University, undergraduate course (practicals)
Oct 2011 — Apr 2012	Signal processing. Pompeu Fabra University, undegraduate course (seminars and practicals)

LANGUAGES

Russian (native), English (fluent), Spanish (fluent), Catalan (intermediate).