

Olga Slizovskaia

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Experienced AI/ML research scientist & engineer. Expertise in source separation, sound localization, voice conversion, music processing and speech synthesis. Experience in multimodal and audio-visual learning, time series analysis and anomaly detection.

Experience

- 01/2023–
present **Associate Principal AI Scientist**, *AstraZeneca*, Barcelona, Spain.
Deep learning R&D for vocal biomarkers discovery and respiratory sound analysis.
- 04/2020–
12/2022 **Research Engineer**, *Voctro Labs S.L.*, Barcelona, Spain.
R&D for low-latency and low-resource voice conversion systems.
- 01/2021–
10/2021 **Research Consultant**, *Mitsubishi Electric Research Laboratories*, Cambridge, MA, USA (Remote).
Implement models and optimization methods for multi-channel sound localization and classification in multi-source and far-field scenarios.
- 09/2018–
12/2018 **Research Intern**, *Telefonica R&D*, Barcelona, Spain.
Likelihood-based generative models for anomaly detection in images and KPI time series.
- 06/2018–
07/2018 **Visiting Researcher**, *Jeju Deep Learning Camp*, Jeju National University, South Korea.
Visually-informed music source separation with U-Net and Wave-U-Net architectures.
- 01/2016–
03/2020 **PhD Researcher**, *Universitat Pompeu Fabra, Music Technology Group & Image Processing Group*, Barcelona, Spain.
Audio-visual approaches in music information retrieval (instrument recognition, source separation, interpretability).
- 05/2015–
11/2015 **Data Engineer**, *Data-Centric Alliance*, Moscow, Russia.
Responsibilities:
 - design and development of machine learning models for online advertising;
 - development and support of data preprocessing Groovy scripts for an internal data management platform;
 - statistical hypothesis testing.
- 12/2013–
04/2015 **Data Engineer**, *Zvooq LLC*, Moscow, Russia.
Development and support of music ingestion infrastructure for a music streaming service.
Work done:
 - renovation of the music ingestion infrastructure within a group of engineers;
 - development and support of a weekly report system for automatic content processing;
 - design and development of a prototype system for computing usage restrictions.
- 09/2012–
12/2013 **QA/Test Engineer**, *Mentor Graphics Development Services Ltd*, Moscow, Russia.
Functional and regression testing, test cases preparation, bug tracking and reporting.

Education

- 2016–2020 **PhD, Information and Communication Technologies**,
Universitat Pompeu Fabra, Barcelona, Spain.
Thesis: Audio-visual deep neural networks for music instrument classification and separation
Supervisors: Prof. Emilia Gomez, Prof. Gloria Haro
- 2008–2013 **BSc, MSc, Applied Mathematics and Computer Science**,
Lomonosov Moscow State University, Moscow, Russia.
Thesis: Content-based and context-based music mood classification
Supervisor: Dr. Dmitry Kozlov

Honors

- 2022 **Torres Quevedo Fellowship**,
Spanish Ministry of Science and Industry, Barcelona, Spain.
- 2016 **Maria de Maetzu Unit of Excellence Scholarship: Large-scale Multimedia Music Data**,
Spanish Ministry of Economy and Competitiveness, Barcelona, Spain.

Skills

Programming Languages	Python, bash, Matlab, PL/pgSQL, R, C/C++	Science & Analysis	NumPy, Pandas, Scikit-learn, OpenCV, TensorFlow, PyTorch, Keras, XGBoost, librosa, etc.
Programming Tools	git, SVN, Docker, Vagrant, Jenkins, Apache	Other	Python ORM tools, RabbitMQ
Databases	PostgreSQL, MySQL, MongoDB, Hive, Hbase	Languages	Russian (native), English (fluent), Spanish (fluent), Catalan (intermediate), German (basic)

Other

Teaching Experience

- 2016-2019 **Teaching Assistant, Labs and Seminars**, *Universitat Pompeu Fabra*, Barcelona, Spain.
Analysis and Design of Algorithms (code 24298, 2019), Image Analysis and Interpretation (code 21632, 2017-2019), Sound Creation Lab (code 21629, 2016-2018).
- 2012–2013 **Teaching Assistant, Informatics**, *179 School of Moscow Institute Of Open Education*, Moscow, Russia.

Community Service

- 2024 Women in Music Information Retrieval, *Mentor*
- 2016–2022 International Society for Music Information Retrieval Conference, *Reviewer*
- 2019–2021 DCASE Workshop, *Reviewer*
- 2016–2018 DTIC Doctoral Student Workshop, UPF, *Organizing committee member*
- 2016–2019 Master's projects supervision

Publications

- [1] Olga Slizovskaia, Emilia Gómez, and Gloria Haro. Automatic musical instrument recognition in audiovisual recordings by combining image and audio classification strategies. In *13th Sound and Music Computing Conference (SMC 2016)*, 2016.
- [2] Jordi Pons, Olga Slizovskaia, Rong Gong, Emilia Gómez, and Xavier Serra. Timbre analysis of music audio signals with convolutional neural networks. In *25th European Signal Processing Conference (EUSIPCO)*, 2017.
- [3] Olga Slizovskaia, Emilia Gómez, and Gloria Haro. Musical instrument recognition in user-generated videos using a multimodal convolutional neural network architecture. In *ACM International Conference on Multimedia Retrieval*, 2017.
- [4] Eduardo Fonseca, Rong Gong, Dmitry Bogdanov, Olga Slizovskaia, Emilia Gómez, and Xavier Serra. Acoustic scene classification by ensembling gradient boosting machine and convolutional neural networks. In *Workshop on Detection and Classification of Acoustic Scenes and Events*, 2017.
- [5] Olga Slizovskaia, Emilia Gómez, and Gloria Haro. Correspondence between audio and visual deep models for musical instrument detection in video recordings. In *18th International Society for Music Information Retrieval Conference*, 2017.
- [6] Olga Slizovskaia, Emilia Gómez, and Gloria Haro. A case study of deep-learned activations via hand-crafted audio features. In *The 2018 Joint Workshop on Machine Learning for Music*, 2018.
- [7] Olga Slizovskaia, Leo Kim, Gloria Haro, and Emilia Gómez. End-to-end sound source separation conditioned on instrument labels. In *IEEE ICASSP*, pages 306–310, May 2019.
- [8] Joan Serrà, David Álvarez, Vicenç Gómez, Olga Slizovskaia, José F Núñez, and Jordi Luque. Input complexity and out-of-distribution detection with likelihood-based generative models. In *The 2020 International Conference on Learning Representations (ICLR)*, 2020.
- [9] Daniel Michelsanti, Olga Slizovskaia, Gloria Haro, Emilia Gómez, Zheng-Hua Tan, and Jesper Jensen. Vocoder-based speech synthesis from silent videos. *Proc. Interspeech 2020*, pages 3530–3534, 2020.
- [10] Juan F. Montesinos, Olga Slizovskaia, and Gloria Haro. Solos: A dataset for audio-visual music source separation and localization. *IEEE 22nd International Workshop on Multimedia Signal Processing*, 2020.
- [11] Olga Slizovskaia, Gloria Haro, and Emilia Gómez. Conditioned source separation for music instrument performances. *The IEEE/ACM Transactions on Audio, Speech, and Language Processing*, 2021.
- [12] Olga Slizovskaia, Gordon Wichern, Zhong-Qiu Wang, and Jonathan Le Roux. Locate this, not that: Class-conditioned sound event doa estimation. In *IEEE ICASSP*, May 2022.