

Philip Tovstogan

Curriculum Vitae

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Education

- 2018–2022 **Ph.D. (in-progress)**, *Music Technology Group, Universitat Pompeu Fabra*, Barcelona, Spain, part of MIP-Frontiers, expected March 2022.
Supervisors: Xavier Serra, Dmitry Bogdanov
Thesis: Exploration of Music Collections with Audio Embeddings
Research, development and evaluation of visual music exploration and discovery system that takes advantage of deep learning music auto-tagging systems (genre, mood/themes, instruments).
- 2017–2018 **M.S.**, *Master in Sound and Music Computing, Universitat Pompeu Fabra*, Barcelona, Spain, *Grade: 9.0/10.0*.
Supervisors: Dmitry Bogdanov, Alastair Porter
Thesis: Exploring Music Similarity with AcousticBrainz
Implementation, evaluation and improvement of existing state-of-the-art music similarity algorithms in the context of AcousticBrainz.
- 2012–2015 **M.S.**, *Electrical Engineering and Computer Science International Graduate Program, National Yang Ming Chiao Tung University*, Hsinchu, Taiwan, *Grade: 90.1/100*.
Supervisor: Hsu-Feng Hsiao
Thesis: Optimization of Video Streaming Using Video Quality Estimation and LMRC Channel Coding
Optimization of Layer-aligned Multi-priority rateless codes (LMRC) for H.265 video streaming over mobile networks. Development of probabilistic model to gauge impact of channel conditions on frame loss patterns.
- 2008–2012 **B.S.**, *Department of Computer Science, Multimedia & Network Engineering Program, National Yang Ming Chiao Tung University*, Hsinchu, Taiwan, *Grade: 90.2/100*.
Final project: Design and Implementation of Perceptual Audio Coding Models
Survey of different MP3 codecs (LAME, Fraunhofer, GoGo, Apple) and analysis of perceptual audio quality degradations for different genres. Proposal of MP3 codec that leverages genre-specific audio characteristics to tune its psychoacoustic model.

Publications (selected)

- 2020 **MediaEval 2020: Emotion and theme recognition in music using Jamendo.** Bogdanov, D., Porter, A., Tovstogan, P., and Won, M. *Working Notes Proceedings of the MediaEval 2020 Workshop*, Online

Web Interface for Exploration of Latent and Tag Spaces in Music Auto-Tagging. Tovstogan P., Serra X., and Bogdanov D. *Machine Learning for Media Discovery Workshop (ML4MD), International Conference on Machine Learning (ICML)*, Vienna, Austria

2019 **Da-TACOS: A Dataset for Cover Song Identification and Understanding.** Yesiler F., Tralie C., Correya A., Silva D. F., Tovstogan P., Gómez E., and Serra X. *20th International Society for Music Information Retrieval Conference (ISMIR)*, Delft, The Netherlands

The MTG-Jamendo Dataset for Automatic Music Tagging. Bogdanov, D., Won M., Tovstogan P., Porter A., and Serra X. *Machine Learning for Music Discovery Workshop (ML4MD), International Conference on Machine Learning (ICML)*, Long Beach, CA, United States

Industry Experience

- 2021 **Researcher**, *Jamendo*, Luxembourg, (remote internship).
◦ Extracting music embeddings with Essentia ML models for track-to-track music recommendations (Python, PostgreSQL)
- 2018 **Software Developer**, *Music Technology Group, Universitat Pompeu Fabra*, Barcelona, Spain, (internship, part-time).
◦ [Freesound.org](https://freesound.org): bugfixes and implementation of new features (Python, Django, PostgreSQL)
- 2017 **Software Developer**, *LyraVR*, Taipei, Taiwan, (full-time).
◦ Cross-platform support implementation, Oculus Rift & new controller integration (Unity, C#)
- 2016–2017 **R&D Engineer**, *Bovia*, Zhubei, Taiwan, (full-time).
◦ Development of integration layer between web UI and Linux system (Debian) in Python (flask-restful) for worn camera embedded device (BeagleBone Black, Intel Edison).
◦ Research and development of continuous integration (CI) firmware building system (linux server + embedded devices for testing on specific platforms)
◦ System Administration (Google Cloud, Atlassian JIRA + Confluence + BitBucket, Amazon Web Services, GitLab)
- 2014–2016 **Software Developer**, *Information and Communications Research Laboratories, Industrial Technology Research Institute*, Hsinchu, Taiwan, (part-time, full-time).
◦ Research and development of various projects based on BeagleBone Black embedded system (Java, JS, Python, PHP)
◦ Corporate bicycle rental system maintenance (LAMP stack), architecture design and development of next version of system (MEAN stack)
- 2011–2010 **Software Developer**, *ChangingTec*, Hsinchu, Taiwan, (internship, part-time).
◦ PEAP-MSCHAPv2 RADIUS authorization server for WiFi AP, VPN access, integration with Windows Logon Manager (Java, C#)

Awards and Honors (selected)

- 2018–2021 Marie Skłodowska-Curie Fellowship as part of the MIP-Frontiers training network
- 2018 Best Project for Music Streaming Services from HAMR@ISMIR2018
- 2009–2013 Golden Bamboo Scholarship (average grade > 85/100, 8 semesters)

- 2009–2012 Academic Achievement Award (in top 3 students, 4 semesters)
2012 Outstanding New Student Scholarship (1 semester)

Other relevant experience

- 2020–2021 Reviewer for ISMIR conference
2019–2021 Member of organizing team of *Emotions and Themes in Music* task within Multimedia Benchmarking Initiative (MediaEval)
2021 Papers chair and member of organizing committee for Web Audio Conference (WAC)

Languages

Ukrainian **Native**
Russian **Native**
English **Fluent**
Spanish **Advanced**
Mandarin **Intermediate**

TOEFL 113 iBT @ 2013
Conversationally fluent
Professional capability