



Serkan Sulun

Deep learning researcher

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PUBLICATIONS

Sulun, S., Viana, P., & Davies, M. E. P. (2025). Video Soundtrack Generation by Aligning Emotions and Temporal Boundaries. (preprint submitted to AAAI 2026). [arXiv:2502.10154](#)

Sulun, S., Viana, P., & Davies, M. E. P. (2024). VEMOCLAP - A video emotion classification web application. 2024 IEEE International Symposium on Multimedia (ISM), 137–140. [DOI](#) | [arXiv](#) | [demo](#)

Sulun, S., Viana, P., & Davies, M. E. P. (2024). Movie trailer genre classification using multimodal pretrained features. Expert Systems with Applications, 258, 125209. [DOI](#) | [arXiv](#) | [code](#)

Sulun, S., Oliveira, P., & Viana, P. (2023). Emotion4MIDI: A Lyrics-based Emotion-Labeled Symbolic Music Dataset. EPIA 2023. Lecture Notes in Computer Science, vol 14116. Springer. [DOI](#) | [arXiv](#) | [code](#)

Sulun, S., Davies, M. E. P., & Viana, P. (2022). Symbolic Music Generation Conditioned on Continuous-Valued Emotions. IEEE Access, 10, 44617–44626. [DOI](#) | [arXiv](#) | [code](#)

Sulun, S., & Tekalp, A. M. (2021). Can learned frame prediction compete with block motion compensation for video coding? Signal, Image and Video Processing, 15(2), 401–410. [DOI](#) | [arXiv](#) | [code](#)

Sulun, S., & Davies, M. E. P. (2020). On filter generalization for music bandwidth extension using deep neural networks. IEEE Journal of Selected Topics in Signal Processing, 15(1), 132–142. [DOI](#) | [arXiv](#) | [code](#)

Sulun, S. (2018). Deep Learned Frame Prediction for Video Compression, Master's Thesis. [arXiv](#) | [code](#)

WORK EXPERIENCE

INESC TEC, Researcher <ul style="list-style-type: none">Automatic video-based symbolic music generationFinetuning vision language models for industrial safetyAudio bandwidth enhancement	Mar. 2019 – Present <i>Porto, Portugal</i>
University of Porto, Lecturer <ul style="list-style-type: none">Lecturer for the course Programming with Python	Sep. 2023 – Present <i>Porto, Portugal</i>
Catolica Porto Business School, Lecturer <ul style="list-style-type: none">Lecturer for the course Python for Business Analytics	Mar. 2024 – Present <i>Porto, Portugal</i>
Koc University, Research assistant <ul style="list-style-type: none">Video compression and frame prediction using deep neural networks	Sep. 2016 – Nov. 2018 <i>Istanbul, Turkey</i>
Koc University, Teaching assistant <ul style="list-style-type: none">Preparing and leading laboratory sessions for the course, Programming with MATLAB	Sep. 2016 – Nov. 2018 <i>Istanbul, Turkey</i>
Champalimaud Centre for the Unknown, Intern <ul style="list-style-type: none">Processing neural signals and videos obtained by rat experimentsDesigning the controller board.Article acknowledgment: DOI	Jul. 2013 – Oct. 2013 <i>Lisbon, Portugal</i>
Sabanci University <ul style="list-style-type: none">Peer lecturer on freshman mathematics, physics, chemistry, and biology	Feb. 2010 – Jun. 2014 <i>Istanbul, Turkey</i>

EDUCATION

University of Porto <i>PhD, Electrical and Computer Engineering</i>	Present <i>Porto, Portugal</i>
Koc University <i>MS, Electrical and Electronics Engineering (GPA: 3.81/4, converted to 19/20)</i>	Nov. 2018 <i>Istanbul, Turkey</i>
Sabanci University <i>BS, Electronics Engineering (GPA: 3.86/4, converted to 20/20)</i>	Jun. 2014 <i>Istanbul, Turkey</i>

AWARDS & FUNDING

Doctoral Fellowship, la Caixa Foundation

Doctoral Fellowship, Portuguese Foundation for Science and Technology (FCT)

Seed Projects Research Grant, INESC TEC

Best Presentation Award, EPIA Conference on Artificial Intelligence Student Symposium

Ranked 9 out of 204,392 in the Turkish Academic Personnel and Graduate Education Exam

Ranked 297 out of 1,349,782 in Turkish University Entrance Exam

Graduate Fellowship (Master's), Koc University

Excellence Merit Scholarship (Bachelor's), Education Foundation of Turkey

Excellence Merit Scholarship (Bachelor's), Sabanci University

Employment Scholarship, Sabanci University

Bachelors Scholarship, Prime Ministry of Turkey

Erasmus+ Exchange Grant, European Commission

Erasmus+ Internship Grant, European Commission

SKILLS

Deep learning: Pytorch, Tensorflow, generative AI, transformers, adversarial learning, convolutional neural networks, vision language models, LoRA finetuning, cloud platforms (AWS, GCP, Azure), Slurm

Programming: Python, MATLAB, C++, Julia

Signal processing: MIDI, audio, image, video, natural language processing; video compression; computer vision

Miscellaneous: Machine learning, remote development, Git, LaTeX, Ubuntu, Bash

Music: Drumming, Cubase, Protools, Audacity, MIDI

MANAGEMENT AND LEADERSHIP

Principal Investigator: INESC TEC Seed project: Video and MIDI processing using deep neural networks.

Supervisor: Master's thesis: Emotion classification of MIDI lyrics using transformers

Supervisor: Bachelor's project: Speech emotion classification

Coordinator: Lab sessions and 5 assistants in the course, Introduction to MATLAB

INVITED TALKS

Introduction to deep learning, *Polytechnic Institute of Porto, Portugal*

Deep learning for music generation, *University of Porto, Portugal*

Deep learning for music information retrieval, *University of Porto, Portugal*

INTERVIEWS

SIC Noticias: Portugal vai receber Turquia

Observador: Generating music from videos

Olhar No Progresso: Deep learning, multimedia, and music

[Website](#) | [YouTube](#)

[Portuguese original](#) | [English translation](#)

[Website](#) | [YouTube](#)

LANGUAGES

English (C2), Portuguese (B1), Turkish (native)

ACTIVITIES

Finished in 04:20:05, in the 42 km. Porto Marathon

Drummer, in Santa Cecilia Music School rock band

Parachuting, in Turkish Aeronautical Association with 5-day training camp and 400 m. solo jump

Volunteer, Telfs Youth Center Austria (Erasmus+) and World Wide Opportunities on Organic Farms (WWOOF)