

Ricardo Kleinlein

AI - machine learning researcher

date of birth

May - 24 - 1992

contact

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LinkedIn profile

languages

ESP mother tongue
ENG fluent (C1)
JPN basic (N5)

programming

Python
Java
C/C++
R
Matlab & Simulink
Bash
CSS3 & HTML5
L^AT_EX

skills

Responsability
Teamwork
Communication
Fast learner
Mathematical skills
Computer Vision
Speech Processing
HPC
Kalman filters
State-Space models

Summary

I am a physicist profoundly interested in Artificial Intelligence. Experience hands-on in Deep Learning in time series analysis both in speech treatment and medical data.

Publications

- Kleinlein, R., García-Faura, Á., Luna Jiménez, C., Montero, J.M., Díaz-de-María, F. and Fernández-Martínez, F. Predicting Image Aesthetics for Intelligent Tourism Information Systems. *Electronics* 2019, 8, 671.
- Kleinlein, R. and Riaño, D. Persistence of data-driven knowledge to predict breast cancer survival. *International Journal of Medical Informatics* (2019). (Accepted)
- Kleinlein, R., Luna-Jiménez, C., Montero, J. M., Callejas, Z. and Fernández-Martínez, F. Predicting Group-Level Skin Attention to Short Movies from Audio-Based LSTM-Mixture of Experts Models. *Interspeech* 2019 (Accepted)

education

- | | | |
|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|
| 2017–Now | PhD. student | Universidad Politécnica de Madrid |
| | Human knowledge, or the representation we build of the world, comes from the joint understanding of all senses (touch, smell, taste, pain...). Traditional machine learning, and even the most recent papers on multi-task learning always take into account just one main task or input data type. We propose novel architectures that try to replicate in a computational environment the working principles of human brain. | |
| 2015–2017 | M.Sc. in Automation and Robotics | Universidad Politécnica de Madrid |
| | <i>Deep Learning strategies for the enhancement of Automatic Speech Recognition architectures</i>
This thesis explored different state-of-the-art techniques such as LSTM cells, word2vec embeddings and convolutional layers and their effect on an HMM-DNN ASR system. Graded 10/10, candidate to Honors. | |
| 2016–2018 | M.Sc. in Computational and Mathematical Engineering | Universitat Rovira i Virgili & Universitat Oberta de Catalunya |
| | <i>Prediction of Breast Cancer survival rates</i>
Thesis reporting on data mining and machine learning algorithms predicting the evolution of both survival rates and treatments' effectiveness on breast cancer patients. Accepted for its publication in the <i>International Journal of Medical Informatics</i> . | |
| 2010–2015 | Bachelor in Physics | Universidad Autónoma de Madrid |
| | <i>Isotropic-Nematic-Liquid crystal phase transition: a lattice model</i>
This thesis reported on Monte-Carlo simulations of liquid crystal's lattices undergoing phase transitions due to temperature or shape modifications. Graded 8.8/10. | |

experience

- 2017–2018 **National Institute of Informatics - NII** Tokyo, Japan
Research Intern
Working on multi-model models trained and designed in a fashion so they can perform at the same time traditionally unrelated tasks, such as Speech Enhancement, Voice Conversion and Text-to-Speech Synthesis.
- 2017 **Escuela Técnica Superior de Ingenieros de Telecomunicación - UPM** Madrid, Spain
Research Assistant
Focused Automatic Speech Recognition, doing research on different approaches based on Deep Learning to improve the accuracy of the whole system, at both acoustic and language level.
- 2015-2016 **Medicsen** London, United Kingdom
Research & Development
Development of the first fully functional and automatic pancreas for diabetic patients. In charge of building the algorithms and mathematical models of the disease from scratch. Main achievements:
- Glycemic curve predicted with **85%** accuracy on the 2-hours-ahead glycemic level from inputs on meal intake, insulin dose and exercise.
 - **Patent:** MedicSen, 2016. Non-Invasive Artificial Pancreas, U.S. Application 50389, MED-001PR, filed January 2016.
 - Co-speaker with Eduardo Jorgensen (MIT Innovator 2017) in REWORK Deep Learning in Healthcare Summit in London, April 2016.

volunteering

- 2017 **Collaborator in AILoveU** Madrid
Speaker at the Business Institute (IE) in AILoveU Vol.2: "Siri's hearing aid" on the limitations of current Deep Learning technologies and its potential.
- 2014 **Collaborator in ESN-UAM** Erasmus Students Network
In charge of cultural city tours around the city of Madrid.
- 2012 **Board Member in AEGEE-Madrid** European Students Forum, Brussels
Treasurer, Summer University organiser of this student organisation, based on student exchanges and non-formal training.
- 2012 **Board Member of Séptimo Arte UAM** Universidad Autónoma de Madrid
Co-founder and Vice-president of this cinema forum student association.

interests

professional: data science, neuroscience, quantum computing. **personal:** karate (1st Dan), meditation, basketball, travelling, beer tasting (awarded in a Prague brewery).