

Emotion Recognition using Deep Learning

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Deep Learning paradigm has gained relevance last years in the community of Artificial Intelligence. Several Deep Learning techniques have been successfully applied for computer vision, natural language processing, image processing, time-series analysis. This project is an opportunity for students to approach themselves to one of the most important techniques used nowadays in companies as Google and Facebook for analysing data. We dispose of an annotated database of a specific type of images of facial emotion expressions. The students will develop and apply Deep Learning techniques for solving the face recognition and emotion recognition problems. The first part of the project consists in studying the theoretical techniques, next the students should develop a program with these methods. The students should have good knowledge in programming languages, image processing and basic notions in statistics and numerical optimisation methods. A series of lectures about Deep Learning techniques will be provided to the students in order to improve their theoretical background. This project will be in a collaboration framework with the Department of Computer Science of Kyushu Institute of Technology, Fukuoka, Japan.

Keywords: Deep Learning, Numerical Optimization, Neural Networks, Newton Methods, Machine Learning

Students profile: the students should have a good background in algebra and optimisation methods, and good knowledge in programming languages.

References (not exhaustive list):

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