Clasificarea automată a melodiilor în genuri muzicale

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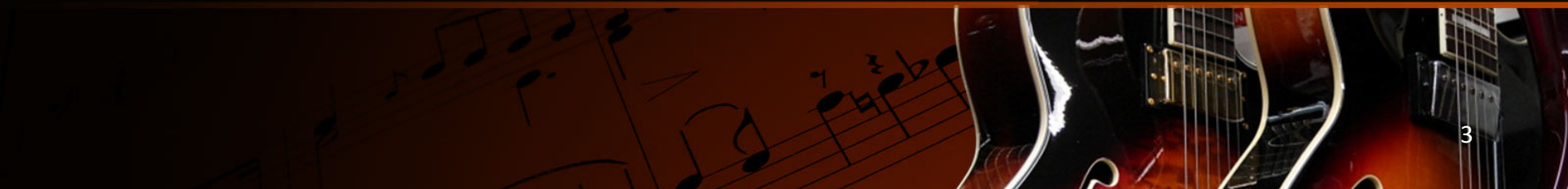
Conf. Dr. Liviu Ciortuz

Cuprins

De ce este o problemă importantă?

1. Studiul făcut de A. C. North și David J. Hargreaves

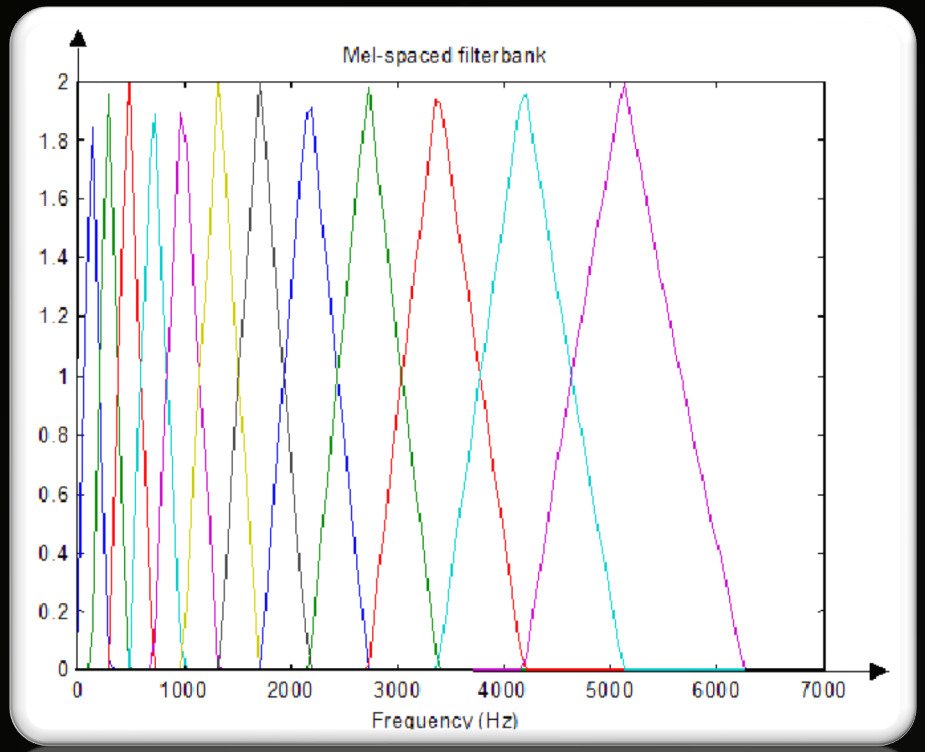
2. Subiectivitate



Setul de date şi atributele folosite

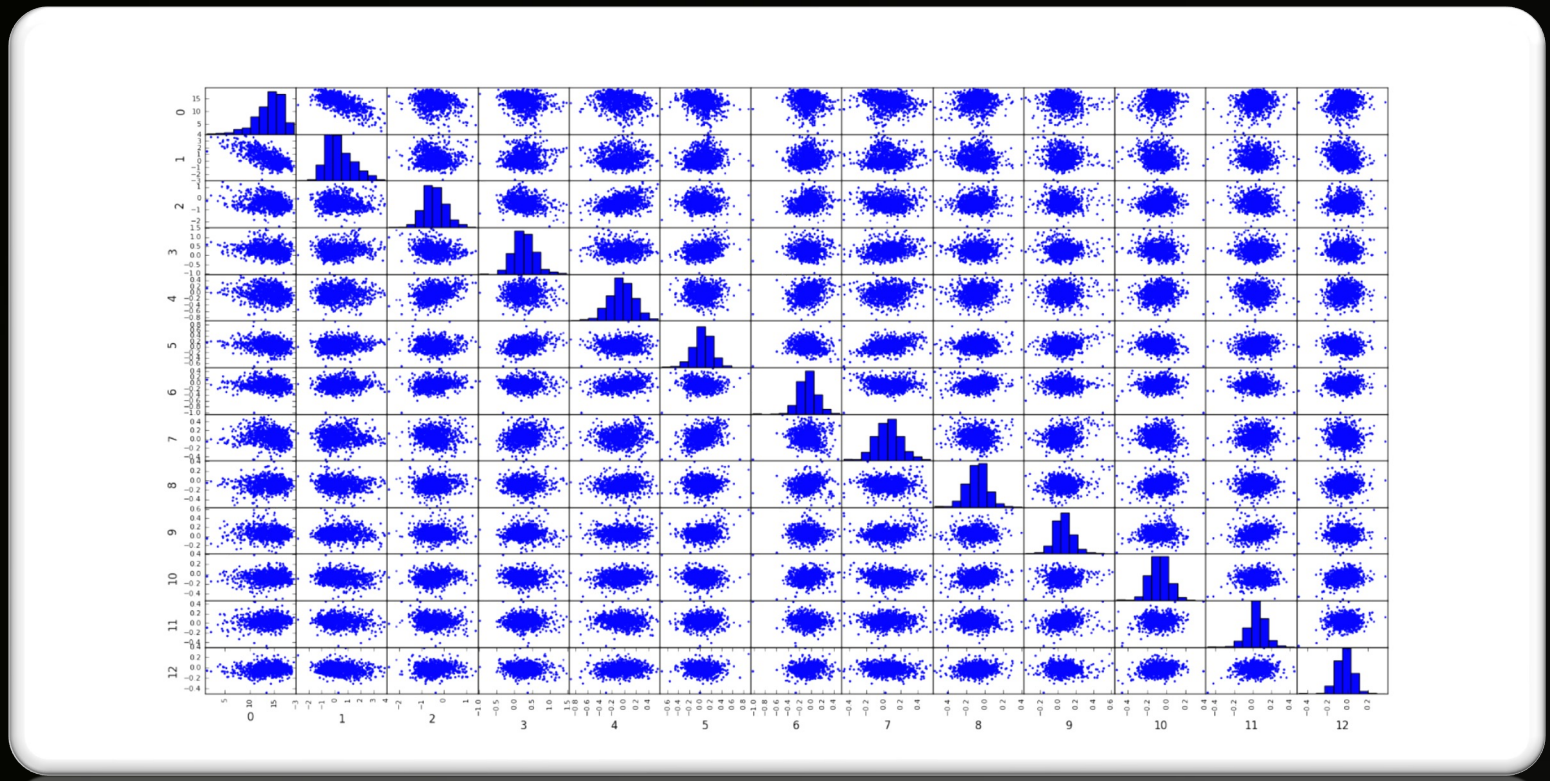
- GTZAN

  blues, clasic,
  country, disco,
  hip-hop, jazz,
  metal, pop,
  reggae, rock



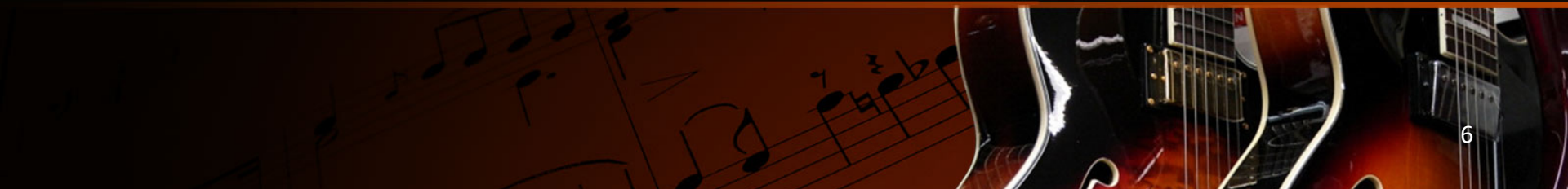
- Coeficienţii MFCC (***M***el ***F***requency ***C***oefficients)

Analiza atributelor

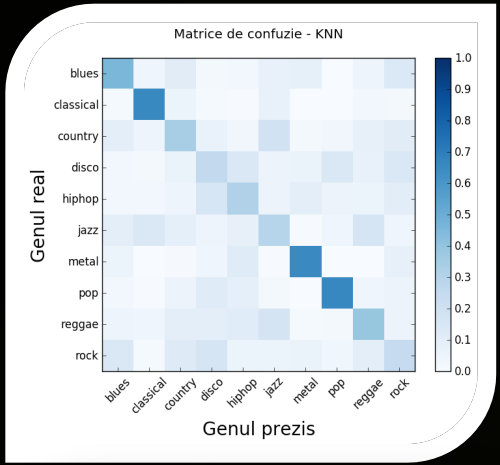


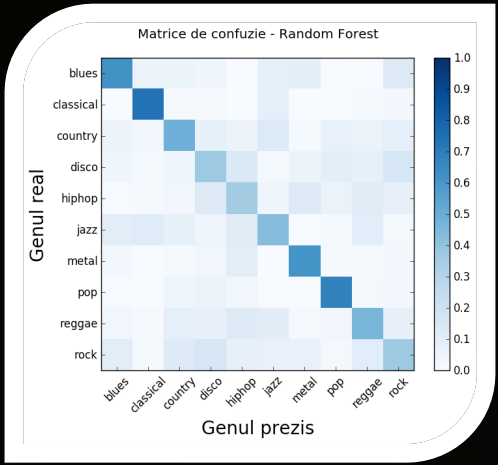
Algoritmi utilizaţi

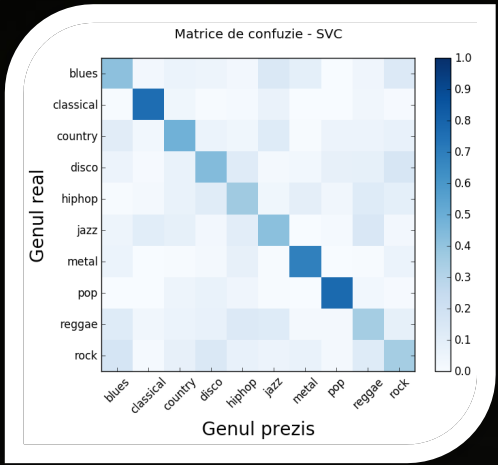
- Reţele neuronale artificiale - 50.55%
- KNN - 53.225%
- Regresie Logistică – 46.325%
- SVM - 52.05%
- Random Forest – 77.975%
- Gradient Boosting - 76.375%

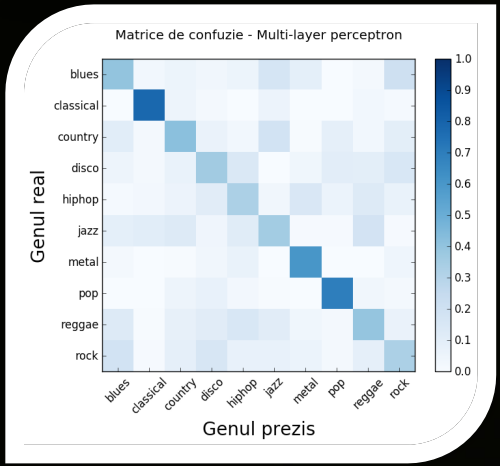


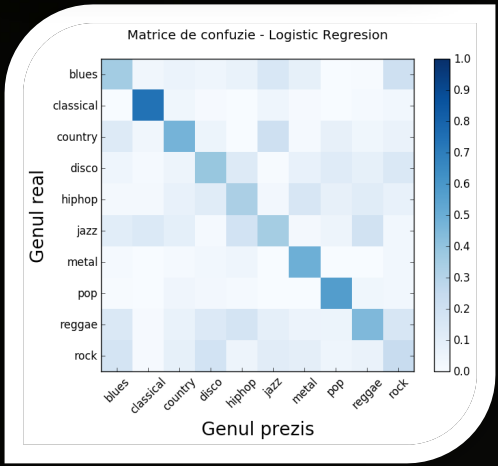
Matrici de confuzie

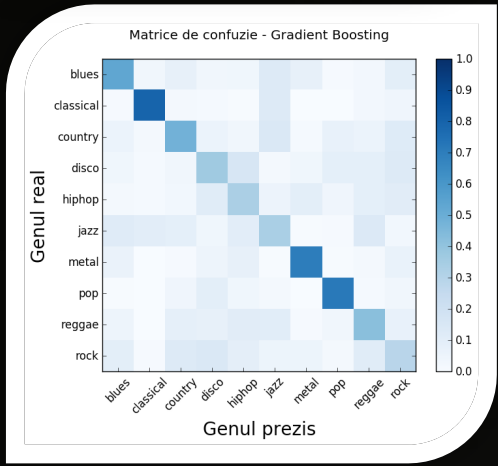


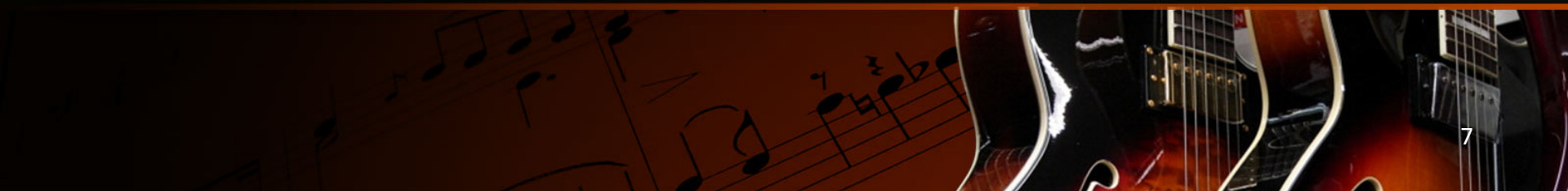




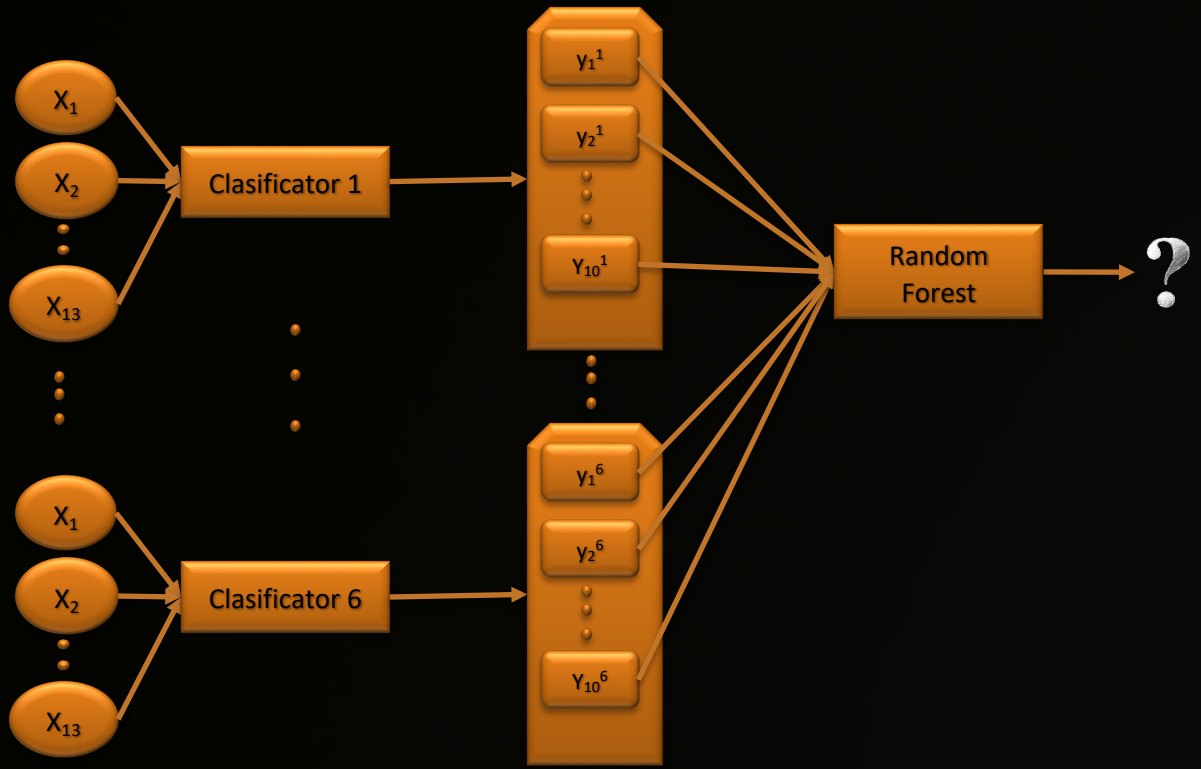


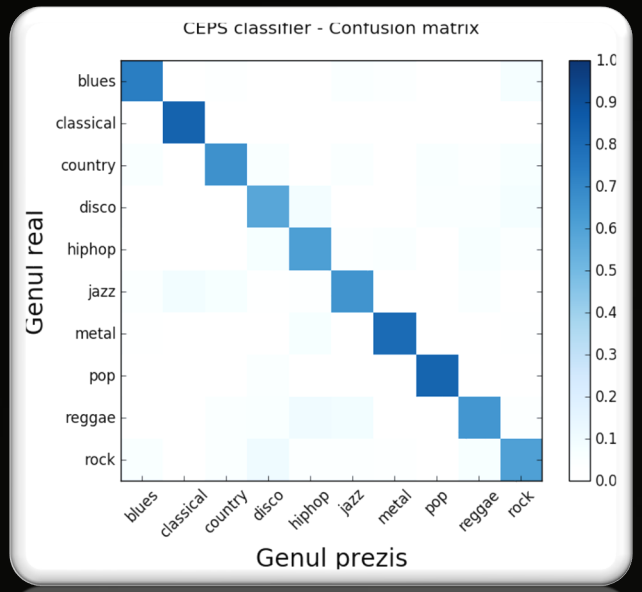






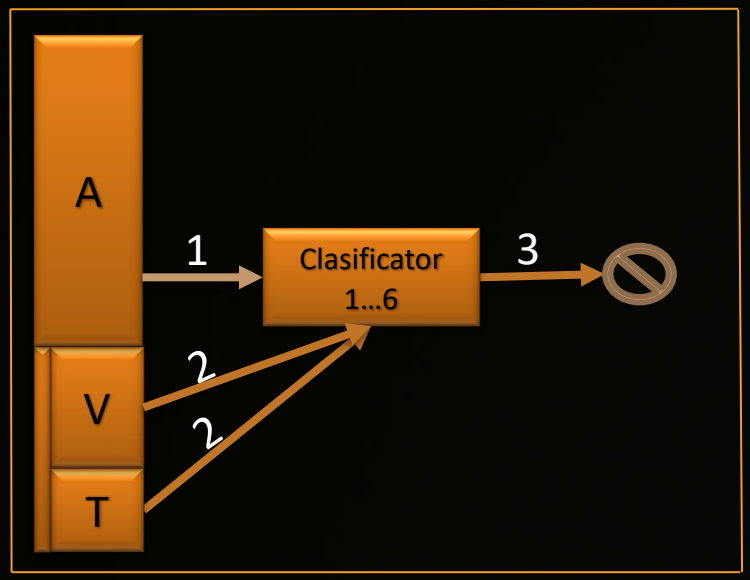
Clasificatorul expert



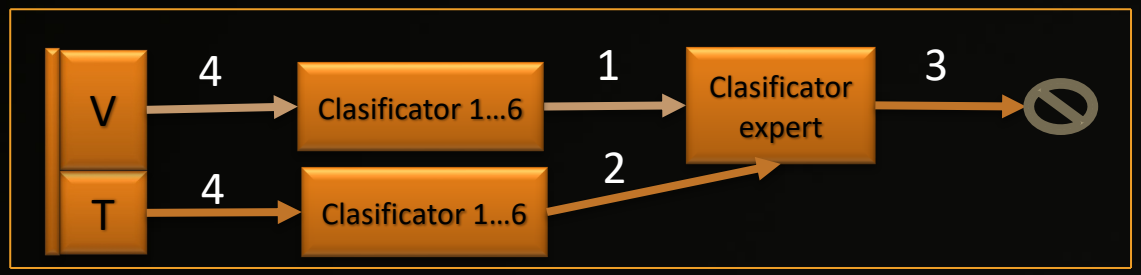


88%

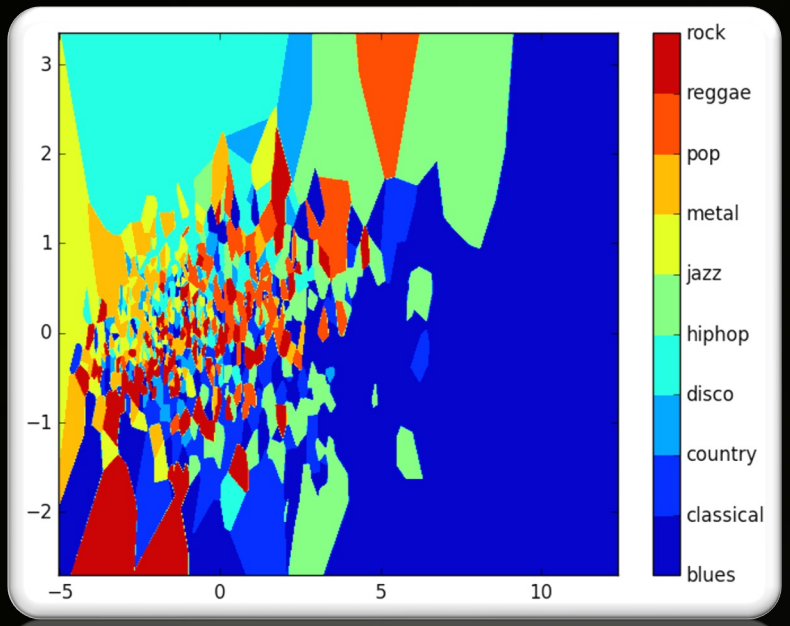
Utilizarea setului de date

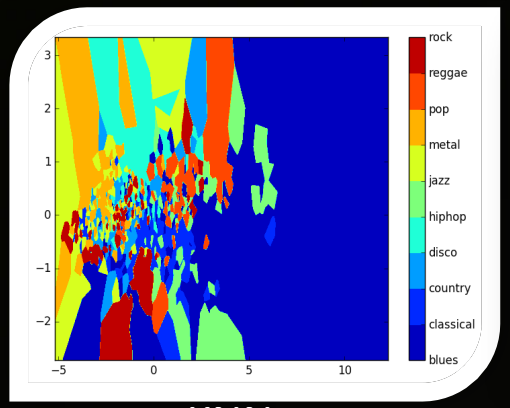


Legendă:
1. Antrenare
2. Testare
3. Generare acurateţe
4. Generare probabilităţi

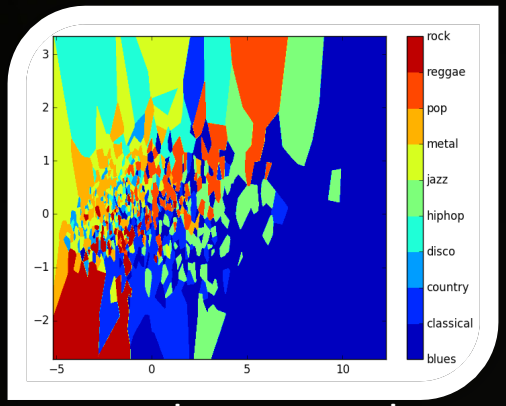


Vizualizarea clasificărilor

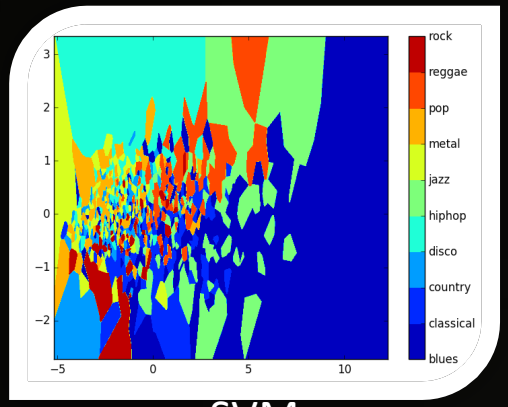




KNN

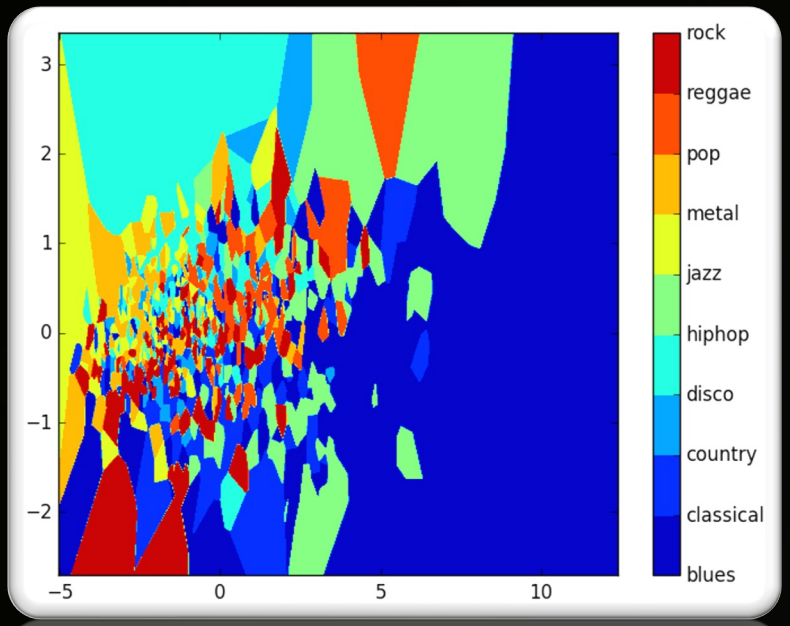


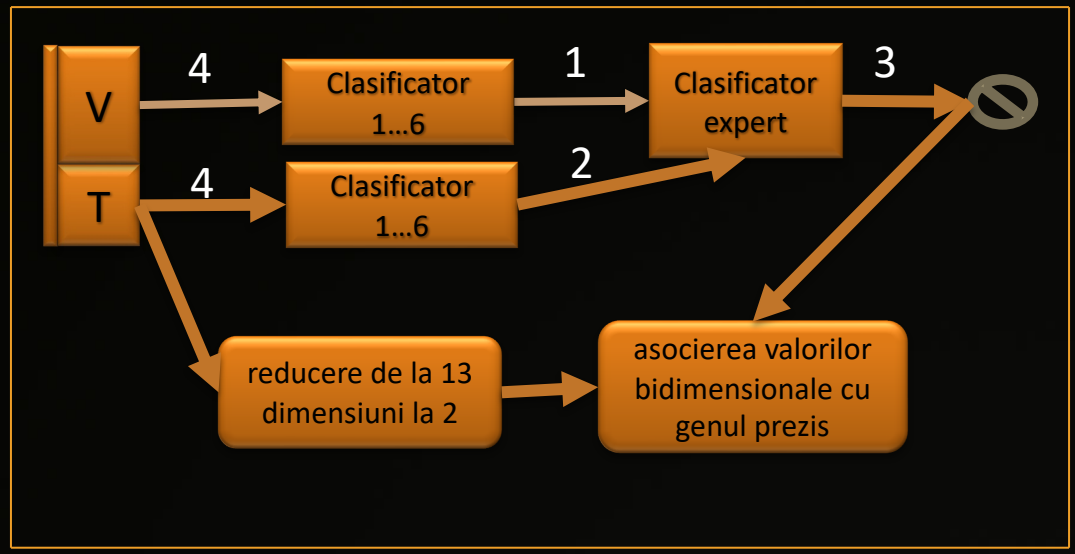
Reţele Neuronale



SVM

Vizualizarea clasificărilor





Concluzii

Acurateţe de 100% ??

DSaaS – **D**ata **S**cience **a**s **a** **S**ervice

Mulţumesc

demo?