Drug Consumption Analysis

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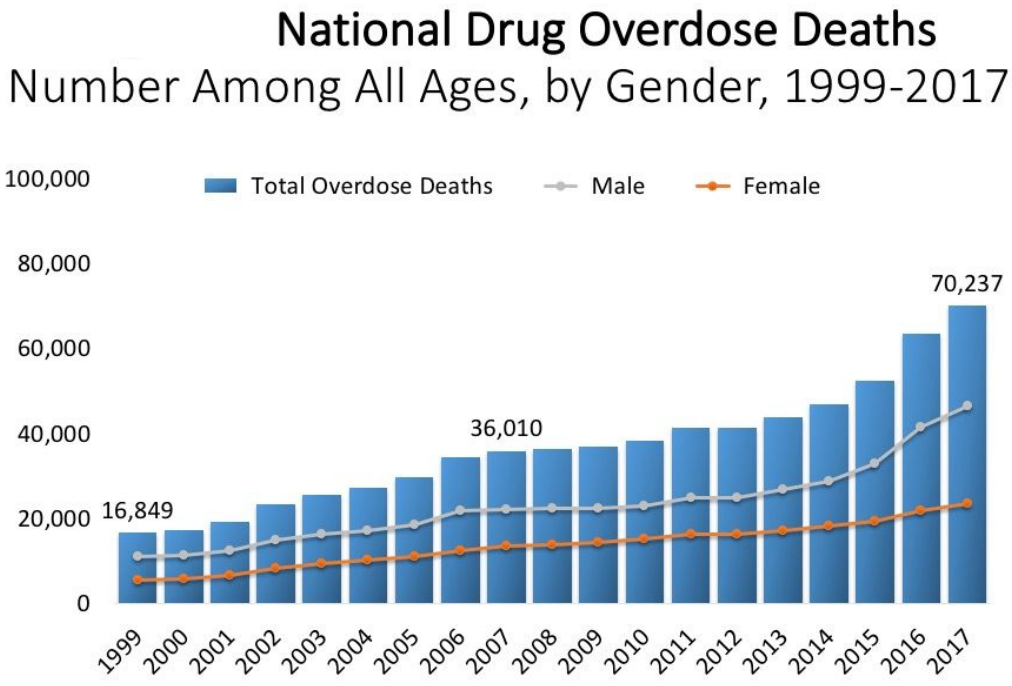
The drug abuse related costs are annually $740 billion*

Costs arise from:

- related crime
- health care
- lost of work productivity



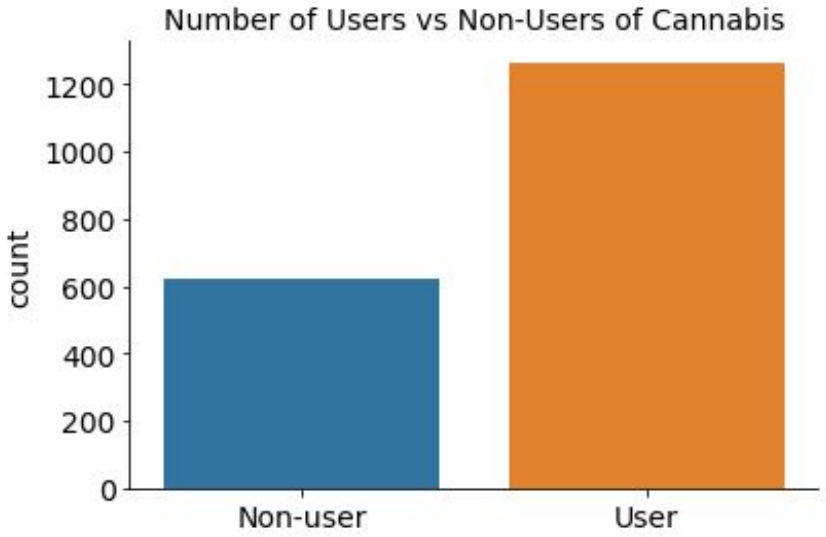
*National Institute of Drug Abuse Statistics: https://www.drugabuse.gov/related-topics/trends-statistics

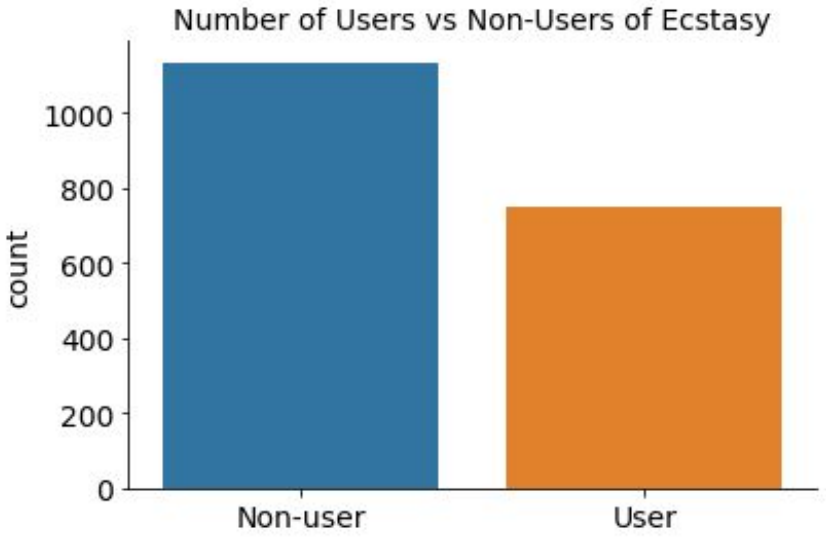
Is it possible to predict cannabis and ecstasy usage based on demographic and personality features?

Data

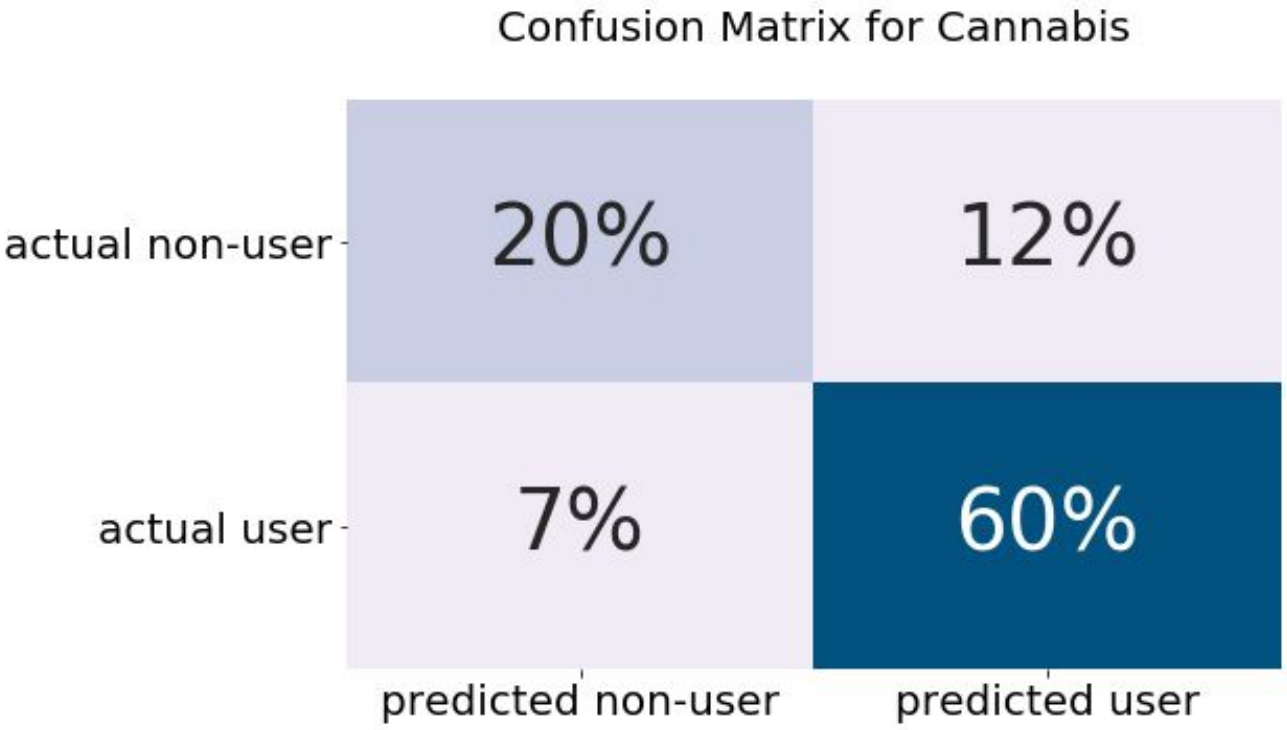
- UCI Dataset
- Age (18-65+)
- Gender
- Level of education
    - Ranges from ‘left school before age 16’ to ‘Doctorate degree’
- 7 personality traits

Number of Users vs Non-Users for Cannabis and Ecstasy

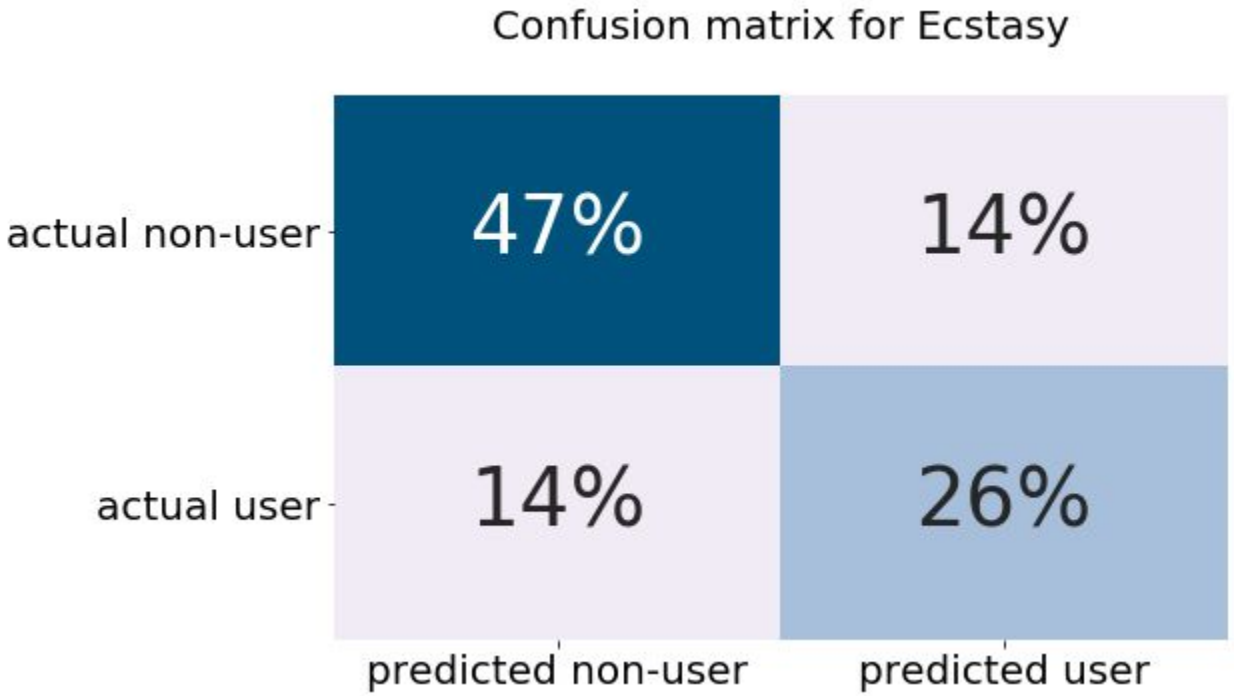




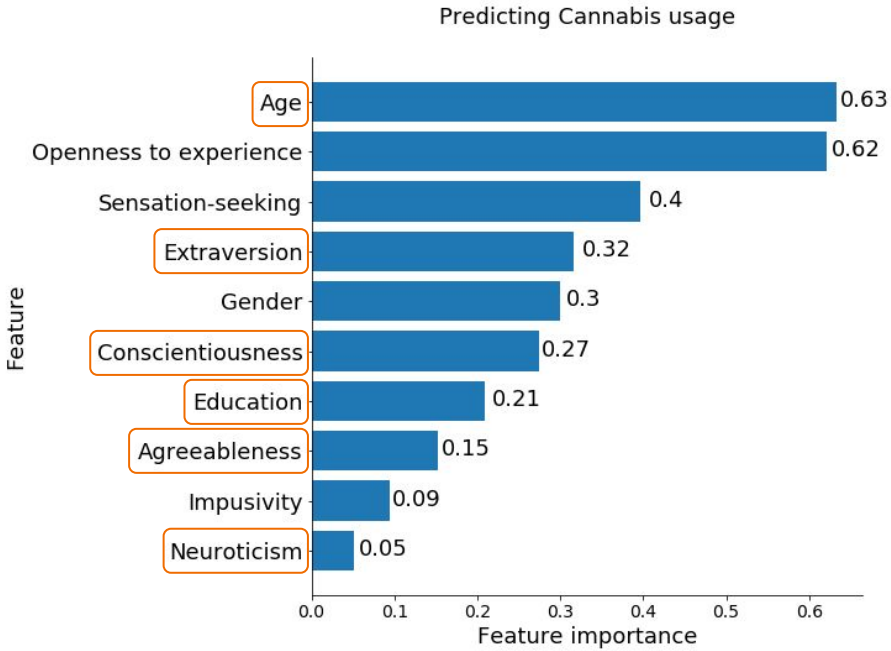
Cannabis: prediction accuracy is 80%

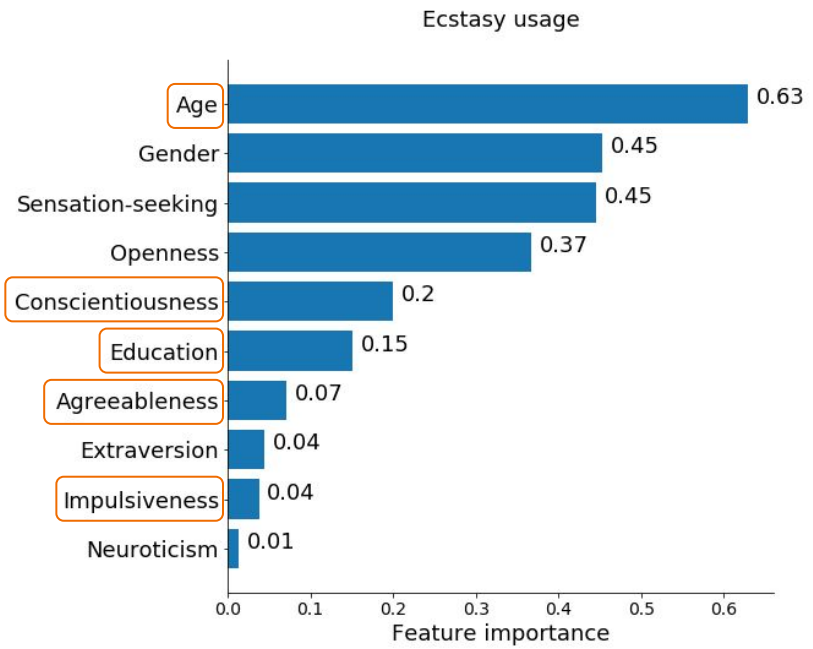


Ecstasy: prediction accuracy is 72%



Findings: the most predictive features





Negative relationship

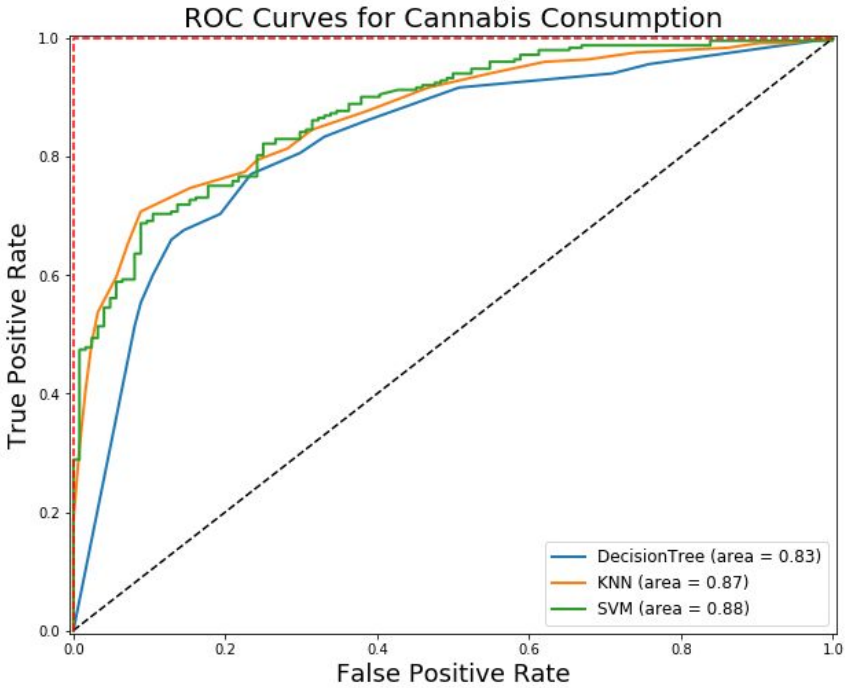
Next Steps

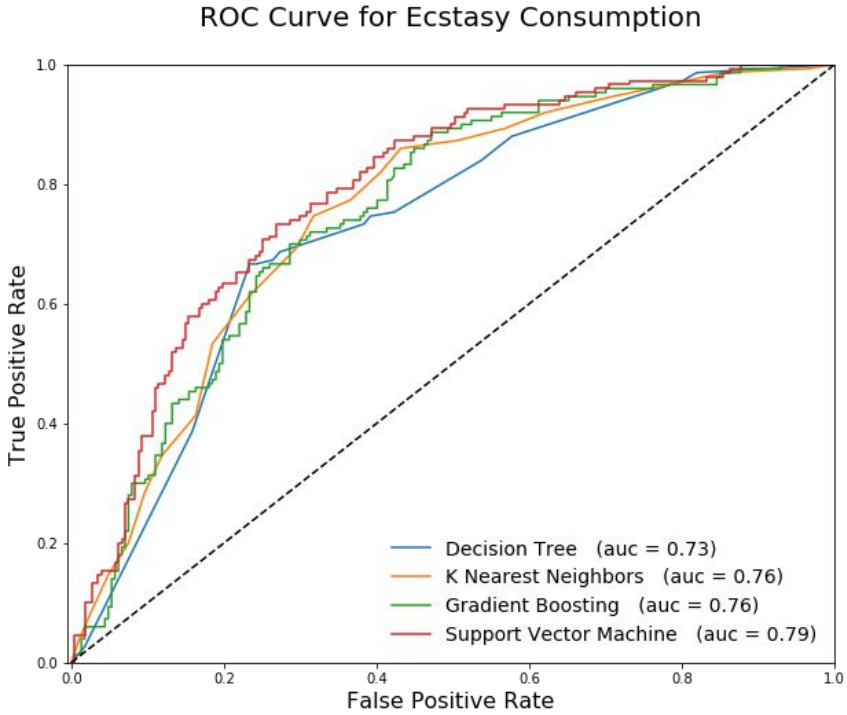
- Run models on other drugs:
  - alcohol, amphetamines, amyl nitrite, benzodiazepine, chocolate, cocaine, caffeine, crack, heroin, ketamine, legal highs, LSD, methadone, mushrooms, nicotine and volatile substance abuse (VSA) and a fictitious drug (Semeron)

- Collect more data: from non-users and more countries and ethnicities

- Multi-class classification

Methodology





7 Personality Traits

- Big 5 Personality Trait (OCEAN model)*:
  - **O**penness to experience
  - **C**onscientiousness
  - **E**xtraversion
  - **A**greeableness
  - **N**euroticism
- Impulsivity
- Sensation seeking

* https://en.wikipedia.org/wiki/Revised_NEO_Personality_Inventory