Predicting Adult attachment for Young Adults:

Identifying Key Predictors and Complex Patterns

**Introduction**

Attachment theory has been one of the most influential approaches to understanding romantic love and numerous studies provided strong evidence of the connection between adult attachment security and romantic relationship satisfaction (Hadden et al., 2014). Joel et al. (2020) identified adult attachment to be one of the main predictors for romantic relationship satisfaction. Relationship satisfaction is closely associated with physical health and mental health. Although relationship satisfaction is a most commonly used indicator of romantic relationship quality, it may significantly vary across different stages of a relationship. In contrast, attachment is often regarded as a relatively stable personal trait. Therefore, this project aims to advance our understanding of the main predictors for adult attachment security, which is crucial for fostering healthy relationships and developing educational courses, support services, and interventions.

Current studies related to adult attachment mostly include it as a predictor for other relational outcomes or test the association between adult attachment and one or two variables. From my knowledge, no study used machine learning to directly quantify and compare the predictive power of many variables that contribute to adult attachment security. The predictors that would be investigated in this study includes demographic factors (e.g., gender, age, and SES), relationship factors (such as trust, self-efficacy, and conflict resolution), and family of origin experiences (such as parental support, parent- child relationship satisfaction, and parental interaction patterns).

**Research Questions**

RQ1: How accurately can a comprehensive set of predictors (demographic information, relationship specific predictors, and family of origin experiences) predict adult attachment security?

RQ2: What are the key predictors of adult attachment security?

RQ3: What complex patterns, including nonlinearities and interactions involving this set of predictors, merit further examination?

**Data**

In this project, I will utilize a dataset comprising diverse self-report measures gathered from 350 participants. These individuals, ranging from 18 to 29 years old, are undergraduate and graduate students who have experienced a romantic relationship.

**Methodology**

I will utilize machine learning, specifically concentrating on LASSO and Random Forest algorithms, to analyze the dataset. To perform hyperparameter tuning, I will employ stratified nested cross-validation. F1 score and AUC will be used to assess the models’ performance. In order to address RQ2, I will estimate feature importance and carry out recursive feature elimination. To tackle RQ3, partial dependence plots (PDPs) will be employed.

**Reference**

Hadden, B. W., Smith, C. V., & Webster, G. D. (2014). Relationship duration moderates associations between attachment and relationship quality: Meta-analytic support for the temporal adult romantic attachment model. *Personality and Social Psychology Review*, *18*(1), 42-58. <https://doi.org/10.1177/1088868313501885>

Joel, S., Eastwick, P. W., Allison, C. J., Arriaga, X. B., Baker, Z. G., Bar-Kalifa, E., ... & Wolf, S. (2020). Machine learning uncovers the most robust self-report predictors of relationship quality across 43 longitudinal couples studies. *Proceedings of the National Academy of Sciences*, *117*(32), 19061-19071.