

# Generalized and Multilevel Linear Models

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# Generalized and Multilevel Linear Models

- In this class we will learn two powerful extensions to the linear model, which we have discussed extensively throughout this course.
- The first extensions is the **Generalized Linear Model** (GLM) which allows the use of distributions other than Gaussian in the outcome variable.
- GLMs can be particularly useful when our outcome variable is binary or bounded to positive values.
- **Multilevel models** (also known as hierarchical or mixed effects models), on the other hand, are useful when there are predictors at different level of variation.
- For example, when studying student performance, we may have information at different levels: individual students (e.g., family background), class-level information (e.g., teacher), and school-level information (e.g., neighborhood) [Gelman et al., 2013].
- Multilevel models extend linear regression to include categorical input variable representing these levels, while allowing intercepts and possibly slopes to vary by level [Gelman and Hill, 2006].

# Generalized Linear Models

- ghghg gfhfg[McElreath, 2020]

# Conclusions

- Blabla

# References I



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