

Figures – ECM443 Research Proposal: Does Using ChatGPT Improve Student Performance at Exeter?

Figure 1. Average Mark by AI Use Frequency — Boxplot showing distribution of marks across AI usage categories (n = 287). One-way ANOVA $F = 3.48$, $p = 0.009$ indicates significant differences; moderate AI users tend to achieve higher marks.

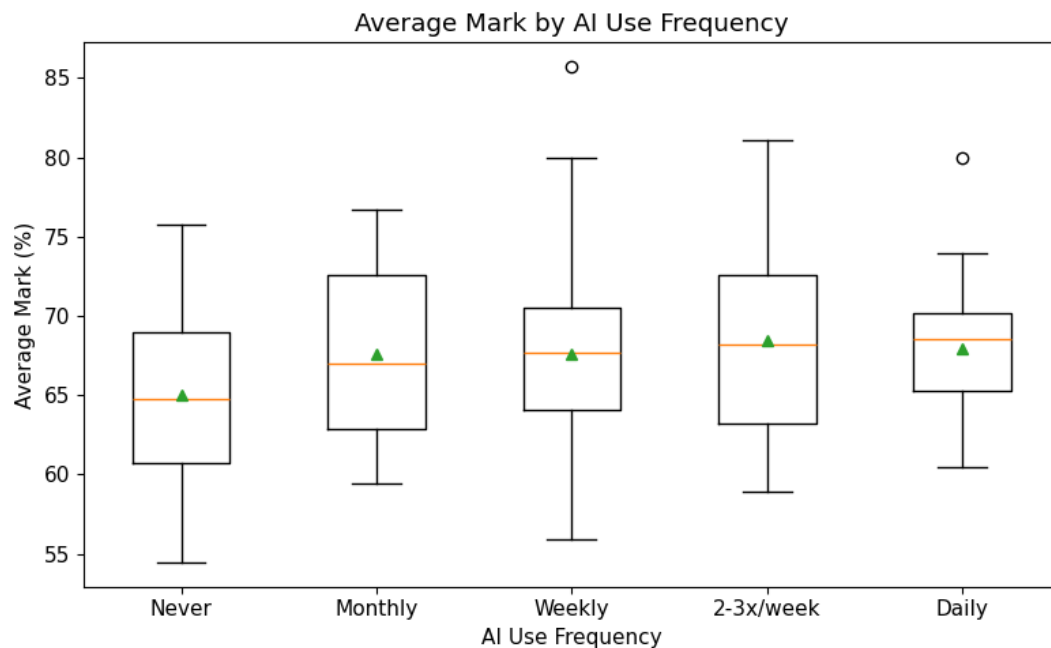


Figure 2. Non-Linear Relationship between AI Use and Performance — Scatter with quadratic regression curve (red). OLS model confirms a significant quadratic effect: balanced use enhances performance whereas heavy reliance reduces gains ($p < 0.05$, $R^2 \approx 0.21$).

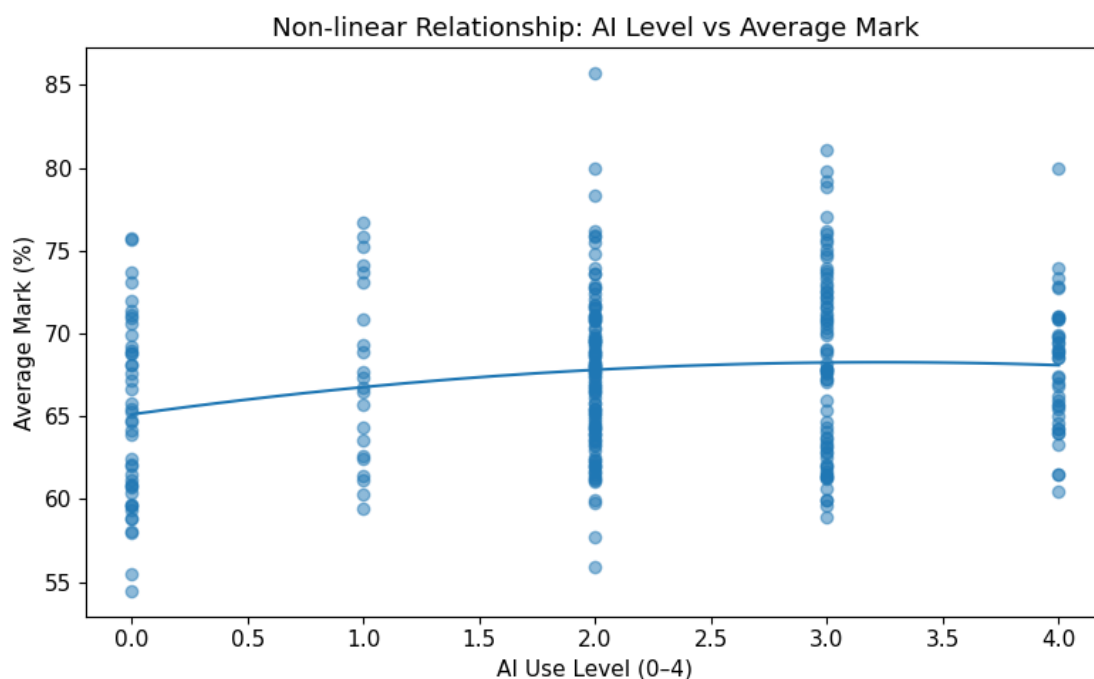


Figure 3. Coursework vs Exam Marks by AI Frequency — Bar chart with $\pm 95\%$ CIs. Coursework gains are larger for moderate AI users, implying tools like ChatGPT support iterative written tasks more than timed exams.

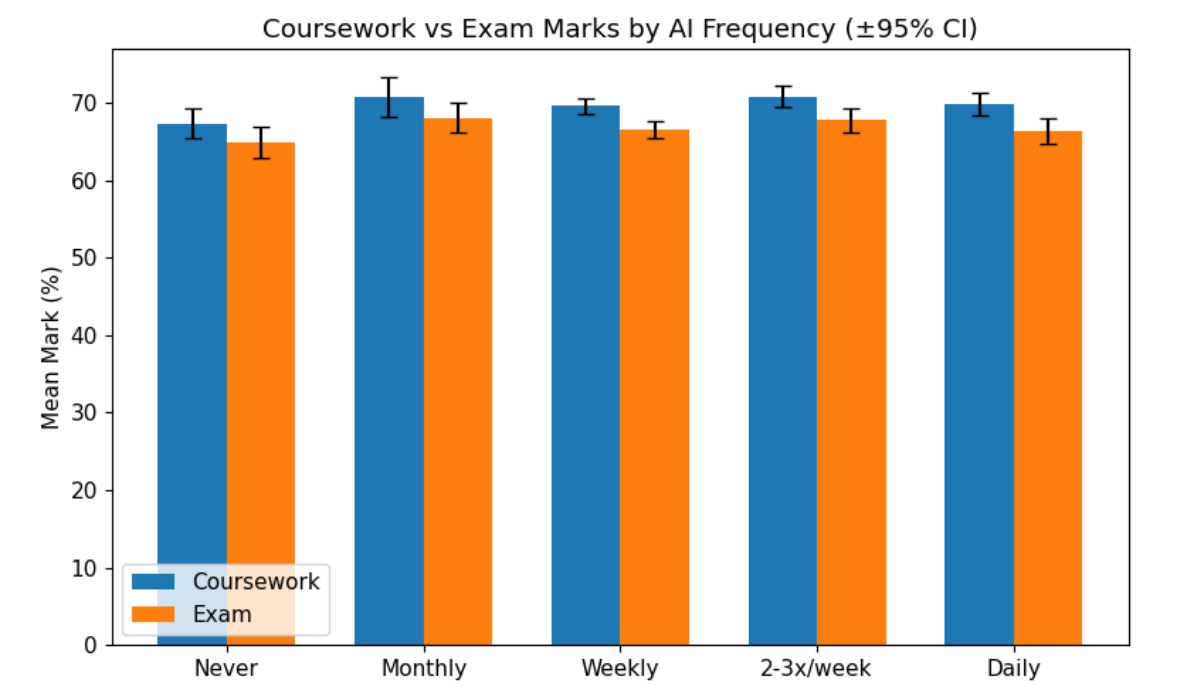


Figure 4. Correlation Matrix of Study Habits, AI Use and Performance — Heatmap showing positive links between study hours, attendance, and marks; AI use shows moderate correlation consistent with Figures 1–2.

