

Figuring Out Which Patients to Outreach Back To



Stephen Soboslay

INTRODUCTION

Stephen Soboslay and I am working on the Business Intelligence team for Cleveland Clinic working as a Data Scientist Intern. This was a remote internship that has lasted from last May and is still ongoing. I got the internship from an email sent out to math majors at Cleveland State University.

if outreached They may be outreached via a phone call or their MyChart

Another objective of this project was to learn Python as I had no prior experience with it.

MCP as their insurance.) Other variables included in the dataset were race, patient's residence of county, insurance company and what department the order came from.

So we decided to switch to a subjective scoring method using three variables: the age of the order, the patient's appointment completion rate, and the department in which the order came from.

OUT_ID
50852	0.5	1.4553575661332945	44010613213	41.79497339522246	26.72169802721

Figure 1. Python output of a sample output of all the scores.

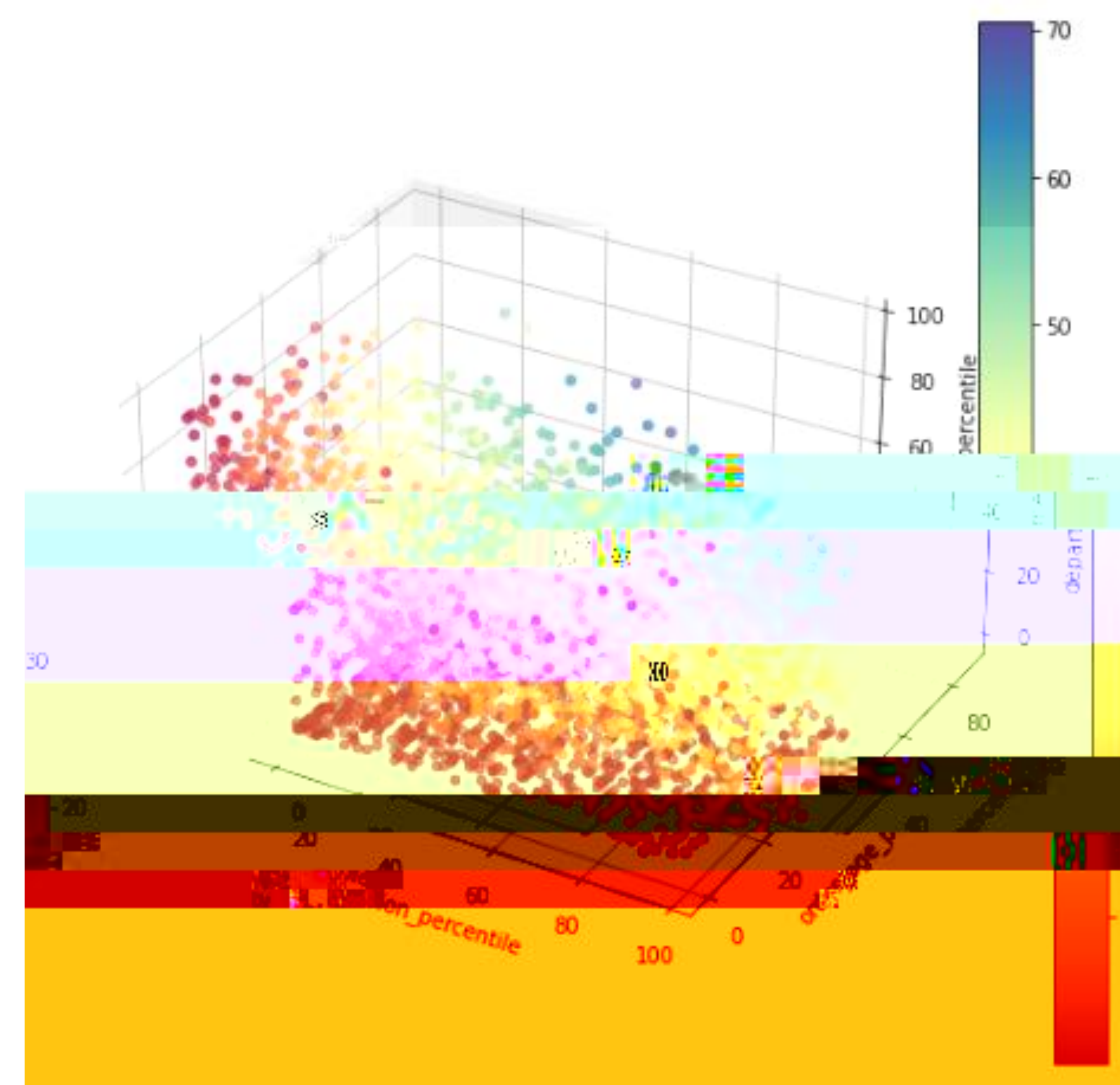


Figure 2. Python graph of the harmonic mean scores

RESULTS

Age of Order: If the patient scheduled a follow-up appointment: follow-up date minus order date. If the patient did not schedule a follow-up: Date the data was collected minus order date. From there we converted the dates into percentiles where if the age of the order was small, you were in a higher percentile, and if the order age was high, you were in a lower percentile.

Appointment Completion Rate: Converted the percentages into percentile, higher percentage completed equals higher percentile. For patients who had appointments before or had low completion percentages,

three different scores, to give the patient one final score, we take the harmonic mean of the three scores

RESULT (Continued)

Harmonic Mean divides the number of scores by the reciprocal of each number of scores

Ex: We have the numbers 4, 7, and 9, then $3 / ((1/4) + (1/7) + (1/9)) = 5.953$

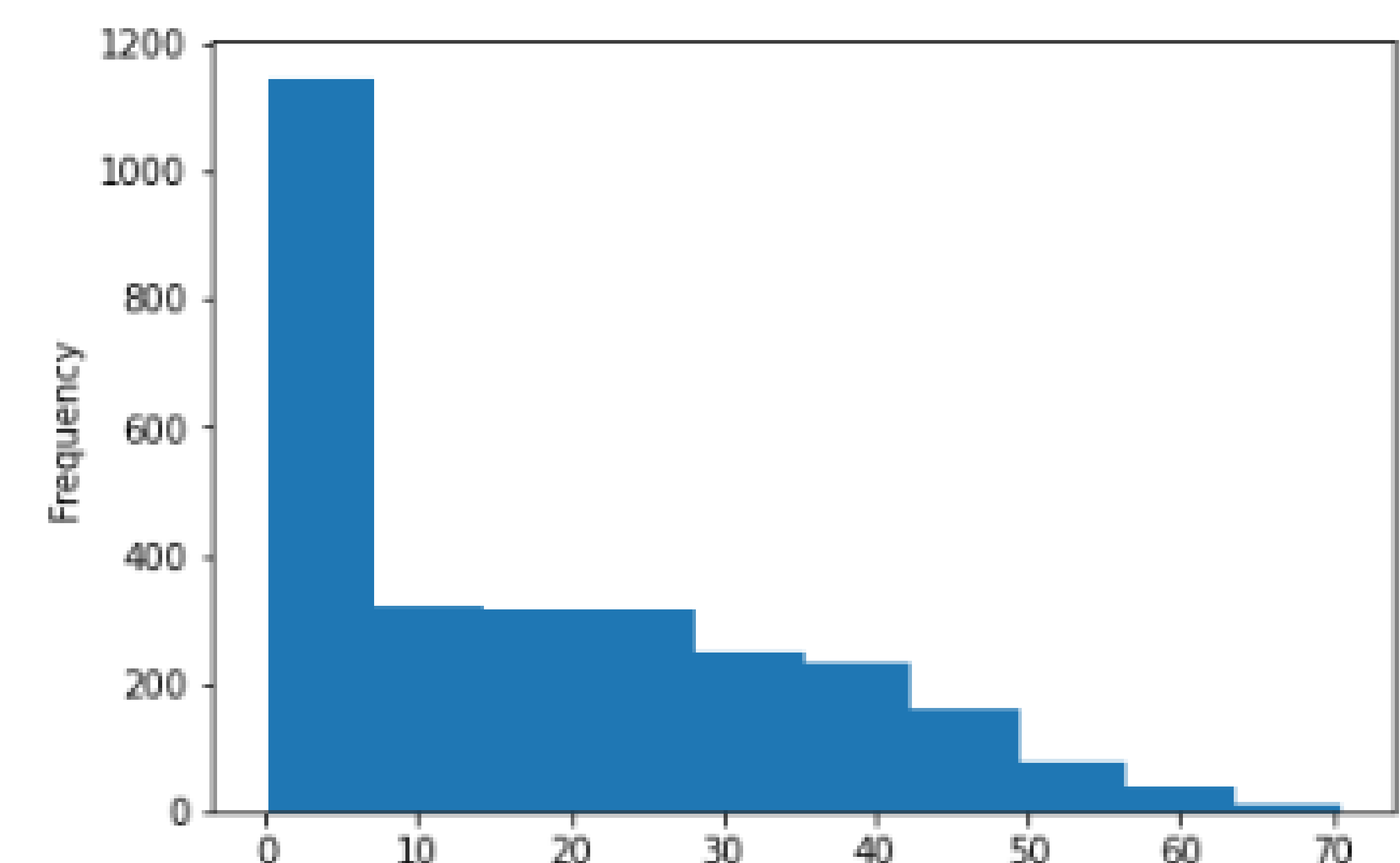


Figure 3. Histogram of Harmonic Mean Scores

FUTURE WORK and CONCLUSIONS

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Acknowledgments

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