













various educational systems from K-G12, Higher Education to Industrial Education across most Scientific and Engineering fields.

### Conflict of Interest

No conflict of interest.

### Acknowledgment

The author acknowledges Dr. Charles Chen for his support.

### References

- [1] Merrilea, J. M. (2009). Video games: A route to large-scale STEM education? *Science*, 323(5910), 79-82.
- [2] Michael, R. A. (1973). *Cluster Analysis for Applications*. New York: Academic Press.
- [3] Rokach, L., & Oded, M. (2005). *Clustering Methods. Data Mining and Knowledge Discovery Handbook*. Springer US.
- [4] Sibson, R. (1973). Slink: An optimally efficient algorithm for the single-link cluster method. *The Computer Journal, British Computer Society*, 16(1), 30-34.
- [5] Defays, D. (1973). An efficient algorithm for a complete-link method. *The Computer Journal, British Computer Society*, 20(4), 364-366.
- [6] Szekely, G. J., & Rizzo, M. L. (2005). Hierarchical clustering via joint between-within distances: Extending Ward's minimum variance method. *J. of Classification*, 22, 151-183.
- [7] Ward, J. H. (2005). Hierarchical grouping to optimize an objective function. *Journal of the American Statistical Association*, 58(301), 236-244.
- [8] Ma, et al. (2007). Segmentation of multivariate mixed data via lossy data coding and compression. *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 29(9), 1546-1562.
- [9] Milligan, G. W. (1980). An examination of the effect of six types of error perturbation on fifteen clustering algorithms. *Psychometrika*, 45, 325-342.
- [10] Hartigan, J. A. (1981). Consistence of single linkage for high-density clusters. *Journal of the American Statistical Association*, 76, 388-394.
- [11] Florek, K., Lukaszewicz, J., Perkal, J., & Zubrzycki, S. (1951). Sur la liaison et la division des points d'un ensemble fini. *Colloquium Mathematica*, 2, 282-285.
- [12] Sokal, R. R., & Michener, C. D. (1958). A statistical method for evaluating systematic relationships. *University of Kansas Science Bulletin*, 38, 1409-1438.

Copyright © 2020 by the authors. This is an open access article distributed under the Creative Commons Attribution License which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited ([CC BY 4.0](https://creativecommons.org/licenses/by/4.0/)).



**Mason Chen** is currently a student at Stanford OHS, USA and serves as the student ambassador and webmaster for STEAMS. Having started STEAMS since its inception in 2014, he has held various roles such as the president of the student chapter from 2017 to 2019. Through STEAMS, he has published more than 20 conference proceeding papers. As first author, he has won numerous awards including the best conference proceeding paper award in the 2018 JMP Discovery Summit as well as finishing 1st place three times for the STEM presentation competition at IEOM conferences. He has also certified the IBM SPSS Statistics Level I, II, Modeler Level I, and IASSC Yellow Belt, Green Belt, and Black Belt.