Plant Seedlings Classification

Dmitri Jakovlev, Julia ..., and Georgy Shevlyakov

Peter the Great Saint-Petersburg Polytechnic University, Department of Applied Mathematics, Russia

Abstract. The abstract should briefly summarize the contents of the paper in 150–250 words.

Keywords: First keyword · Second keyword · Another keyword.

1 Introduction

The need for agricultural products is increasing every day, as the population of planet Earth is growing. Part of the work is done by people, and the forces go to quality control of crops grown. We will be able to use temporary and natural resources more carefully and economically, increase yields if we learn to differentiate noble crops and distinguish them from weeds without human help.

In such a situation, the idea of automation of processes naturally arises, for example, the classification of seedlings by photographs. There is an idea to use neural networks, which is justified by the advantages, but they also have disadvantages in the form of computational costs. It is possible to use less costly algorithms, but they require finer tuning to achieve a comparable result.

- 2 Materials and methods
- 3 Results
- 4 Discussion
- 5 Conclusion
- 6 Acknowledgments?

References

- 1. Giselsson, T., Jørgensen, R., Jensen, P., Dyrmann, M., and Midtiby, H. (2017). A Public Image Database for Benchmark of Plant Seedling Classification Algorithms.
- 2. Bradski, G. (2000). The OpenCV Library. Dr. Dobb's Journal of Software Tools.
- 3. Oliphant, T. E. (2006). A guide to NumPy (Vol. 1). Trelgol Publishing USA.
- 4. Panja, D., Poppe, R. (2018). INFOIBV. Image Processing course, Universiteit Utrecht.

F. Author et al.

- 5. Wojnar, L., Kurzydłowski, K. J. et al. (2000). Practical Guide to Image Analysis, ASM International.
- 6. Suzuki, S. and Abe, K. (1985). Topological Structural Analysis of Digitized Binary Images by Border Following.
- 7. Pedregosa et al. (2011). Scikit-learn: Machine Learning in Python
- 8. Chih-Wei Hsu, Chih-Chung Chang, Chih-Jen Lin (2003). A Practical Guide to Support Vector Classification.