Deep learning and hyperspectral imaging for unmanned aerial vehicles

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DOI:
10.33612/diss.131754011

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Document Version
Publisher's PDF, also known as Version of record

Publication date:
2020

Link to publication in University of Groningen/UMCG research database

Citation for published version (APA):

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Acknowledgements

This dissertation represents at least four years of dedicated research into artificial intelligence, a topic that has always fascinated me. During my previous research in the field of computer vision I already had a chance to do research into evolutionary algorithms for solving several real-life challenges (among which was bacterial colony counting). Deep learning has caused, which can genuinely be called, a revolution in the field of computer vision. During this research I started out with traditional techniques and gradually found new ways to integrate existing computer vision knowledge and deep learning. Ironically, I ended up finding an improved method for counting. The main challenge throughout this project was keeping up with the high pace of the developments within the field.

I would like to thank Prof. Schomaker for his excellent insights and guidance. Each conversation gave valuable insight into the work presented in this dissertation. I would also like to give my express gratitude to Marco Wiering who has always put in the effort to bring my work to the next level by meticulously reviewing everything and giving excellent feedback on the content and direction of the research. I am grateful to all other colleagues and students from the University of Groningen who supported me in various indispensable ways.

I would like to thank Jaap van de Loosdrecht who has been my valued colleague for almost 15 years at NHL Stenden, and his support of my work is one of the foremost reasons this research has been made possible. I am indebted to many colleagues from our research lab in Leeuwarden who have always been great sparring partners, proof readers and supporters: Ioannis Katramados, Martin Dijkstra, Willem Dijkstra and all other colleagues and students from NHL Stenden who never stopped asking questions that enticed me to learn.

This endeavor had not been possible without the continuous support and enthusiasm of my wife Jantina, for which I am very grateful. Last but not least I dedicate this dissertation to my parents who have always given me every opportunity.
Author publications

Thesis publications


Other publications


Dijkstra, K., Berntsen, M., van de Loosdrecht, J. and Jansen, W.J., End-user trainable automatic antibiotic-susceptibility testing by disc diffusion using machine vision. European Congress of Clinical Microbiology & Infectious Diseases (ECCMID), Berlin (Germany), 27–30 April 2013.

Dijkstra, K., Jansen, W., Loosdrecht, J., Prior knowledge in an end-user trainable machine vision framework., European Symposium on Artificial Neural Networks. Computational Intelligence and Machine Learning (ESANN), Bruges (Belgium), 24–26 April 2013.