

PART

Putting computer vision to work

5

Part 5 takes all the techniques that have been covered in Parts 1–4 of the book and looks at their use when Computer Vision is put to work in key practical applications. Evidently, Part 5 cannot cover all possible application areas, so three key areas were selected for special treatment, reflecting the global pressures and needs of Society and the intrinsic capabilities of Computer Vision in the state in which it exists today (i.e., taking into account all the techniques and methods covered in Parts 1–4).

Chapter 21, Face detection and recognition: the impact of deep learning, describes much of the progress made in the past two decades in the

important area of face detection and recognition. It includes a significant discussion of the impact of deep learning on facial analysis, and shows that the latter provides a prime vector for the explosive advances that have been made in deep learning since 2011–12.

The other two subjects covered in Part 5 are those of Surveillance and In-Vehicle Vision Systems, both of which have been developing ever more strongly over the past 15–20 years, with In-Vehicle Vision Systems currently being particularly in vogue with the advent of driverless vehicles. (Here the word “driverless” has to be taken lightly, (1) because most vehicles still retain drivers and (2) because making vehicles truly driverless tends to result in their being, or being felt to be, less reliable, whatever the future may hold.)