

4k. Awards/Achievements

1. *Cum laude* (i.e. among the 5% best at TU/e) reward for PhD-thesis in 2005, [15].
2. *Cum laude* reward for Master thesis (supervised by Prof. J. de Graaf and dr. A. F. M. ter Elst) on a new functional analytic approach to Stokes problems in 2001, [90].
3. Traineeship in company “Geodelta” in Delft in 2001 on “Application of Orthogonal Matrix Groups in Geodesy”, [91] was rewarded with maximum grade of 10.
4. *Best Paper Award* on MMBIA workshop ICCV 2007 (Rio, Brasil) yielding invited submission, cf. [6], to International Journal of Computer Vision.
5. *Best Paper Award* on Scale Space conference (Isle of Skye, Scotland) 2003 yielding invited submission, cf. [76], to International Journal of Computer Vision.
6. *Best Paper Award* on PRIA Conference 2006 (Moscow, Russia) yielding invited submission to Image Processing, Analysis, Recognition and Understanding, cf. [11].
7. *Best PhD-thesis award* of the department Biomedical Engineering, Eindhoven University of Technology, 2005. Also nominated for the best PhD-thesis award of all departments of Eindhoven University of Technology, also known as the ASML-promotion prize, 2005.
8. *Selected paper* on Scale Space and Variational Methods conference 2007 (Isschia, Italy) for invited submission, cf. [83], to International Journal of Computer Vision.
9. *Selected paper* on Cognitive Vision Workshop (Isle of Skye, Scotland) 2005 for invited submission, cf. [10], to International Journal of Computer Vision.
10. *Selected paper*, cf. [87], on Scale Space and Variational Methods conference 2009 (Voss, Norway) for invited submission, cf. [43], to International Journal of Computer Vision.
11. *Selected paper*, cf. [61] on Scale Space and Variational Methods conference 2011 (Israel) for invited submission to JMIV.
12. Copromotor and daily supervisor of *cum laude* (i.e. among the 5% best at TU/e) thesis by E. Franken on “Enhancement of Crossing Elongated Structures in Images”, cf. [8], <http://www.bmia.bmt.tue.nl/people/EFranken/PhDThesisErikFranken.pdf>.
13. Copromotor and daily supervisor of the PhD thesis by B.J.Janssen on “Representation and Manipulation of Images Based on Linear Functionals”, cf. [45], <http://www.win.tue.nl/casa/research/casaprojects/janssen.html>, nominated (not rewarded) for the ASML-promotion prize, 2010.
14. The PI was the first to derive several different explicit representations of (hypo-)elliptic diffusion kernels (and corresponding resolvent kernels) in $SE(2)$ in 2005, [17] and subsequent works [92, 17]. A specific case of this was published a few years later, independently, in the Journal of Functional Analysis [73].
15. The PI derived a special parametrization of sub-Riemannian geodesics on $SE(2)$ without special functions [16, App.A] allowing full analysis of the involved cusps. A close collaboration with control theory experts from Russia and France (Sachkov [36], Boscain [50]) has started and we are writing an article.
16. The PI and B.J.Janssen showed, for the first time, that it is possible to get visually appealing image reconstructions from topological transitions in scale space representations via orthogonal projection in Sobolev spaces/Gelfand-triples, cf. [15, 80, 81], which we refined in [82, 83] and applied successfully in cardiac imaging [58, 84, 85].
17. *Keynote speaker* at SSVM 2011, the third International Conference on Scale Space and Variational Methods in Computer Vision held in Israel, see <http://www.ssvm2011.org/committees.htm>.
18. Derivations of the solutions to open problems posed by Prof. David Mumford (a famous fields-medal laureate) and others in [9], refereed by Prof. D. Mumford (Brown University).