

KEYNOTE TALK
Wednesday, December 10, 2014
1:30 PM – 2:30 PM / Ballroom 5

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Google Street View: Overview & Computer Vision Challenges

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Abstract

From its humble beginnings in 2007, Google Street View has grown to become a global product available in over 50 countries, and an indispensable feature of Google Maps. It is the result of a massive engineering effort by a team including software engineers, product managers, optical designers, mechanical engineers, UI designers, computer vision scientists, operations experts, and scores of others. The initial vision for Street View was provided by Google co-founder Larry Page: back in 2002, he personally collected street scene videos from his moving car in order to bootstrap a new research initiative focused on making street level imagery useful. Turning this initial vision into a product required developing major new pieces of technology, including robust data collection platforms (vans, cars, tricycles, snowmobiles, "trekkers", etc.), systems for computing accurate pose from imperfect sensors, various software components to stitch, blend, color correct and warp collected imagery, a number of systems to address privacy issues, and a lot more. This presentation will give an overview and brief history of the Street View project, and highlight some of the unique computer vision challenges that are keeping the engineering team busy.



Speaker Bio-Sketch: Luc Vincent joined Google in 2004 to work on the Google Books project. While he was ramping up Google's Optical Character Recognition efforts, he got involved in an early stage project whose goal was to capture a large amount of street level imagery and make it universally accessible and useful. Under Luc's leadership, this project became Google Street View and launched officially in May 2007. Luc is now an engineering director in charge of Street View and other map-related imagery projects. Before Google, Luc was Chief Scientist, and then Vice President of Document Imaging at LizardTech, a developer of advanced image compression software. Prior to this, he led an R&D team at the prestigious Xerox Palo

Alto Research Center (PARC). He was also Director of Software Development at Scansoft (now Nuance) and held various technical management and individual contributor positions at Xerox Corporation. Luc has over 60 publications in the area of computer vision, image analysis, and document understanding. He has served as an Associate Editor for the IEEE Transactions on Pattern Analysis and Machine Intelligence (PAMI), and for the Journal of Electronic Imaging. He has also chaired SPIE's conferences on Document Recognition, the International Symposium on Mathematical Morphology (ISMM), and been in the program committee of numerous conferences and workshops. Luc earned his B.S. from Ecole Polytechnique, M.S. in Computer Science from University of Paris XI, and PhD in Mathematical Morphology from the Ecole des Mines de Paris in 1990.