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Sanja Fidler  
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University of Toronto  
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Dear Ms. Sanja Fidler,

I am writing to express my interest in pursuing a Doctor of Philosophy (PhD) under your supervision. I am currently pursuing Master of Science in Mechatronics at University of Siegen, Germany; with research focus on computer vision and its applications. My areas of interest are Computer Vision and Machine Vision with focus on Object Classification, Object Detection and developing classifiers and detection algorithms implementing the concepts of Machine Learning and Deep Learning. I have been looking for opportunities to extend my research work as a Doctoral candidate and gain more knowledge in the application of computer vision and machine learning techniques.

I have come across your research activities in the field of Computational Vision on the University Of Toronto’s Department Of Computer Science official webpage. I find the current research, especially in Object detection and Segmentation, Vision and Language, Scene understanding and its applications extending from robotics to artificial intelligence using Machine Learning, very interesting and would like to be involved in the invention of such innovative ideas.

Owing to my fascination in automotive, automation, machines and robotics, I have chosen Mechanical Engineering during under graduation and successfully completed Bachelor’s. I also received honors from the Institution as well as from the then Minister of State for Human Resources for outstanding academic performance. During the coursework I have performed several projects and submitted a Bachelor thesis involving the use of Support Vector Regression for predicting the critical machine performance by monitoring sensor feedback during automated manufacturing. This is when I realized the significance of computational techniques and algorithms in simplification of complex processes. Soon, after graduation, I joined as a Systems Engineer at Tata Consultancy Services, India, to gain more knowledge about the real-time behavior of the Software Development Systems. During my tenure of 2.8 years at TCS, I had acquired extensive knowledge in software testing methodologies and also working level proficiency in domain specific programming along with resource management, project management and project deliverables.

The advent of new technologies like Artificial Intelligence, Autonomous Robots, Computer Vision, Machine Learning, etc; helped me realize the vast possibilities in the synergy of mechanical, electronics and computers engineering and sciences. This is when I had started Master of Science in Mechatronics at University of Siegen, with an inclination towards automation driven by image processing. The coursework during Masters laid a strong foundation on Sensor Systems, Robotics and Vision based Autonomous systems. I started my research work in the domain of Computer Vision at the Zentrum für Sensorsysteme (ZESS), Siegen. I had worked on the research and development of machine vision algorithms for automated quality inspection of industrial parts, under the supervision of Dr. Ing Klaus Hartmann, the managing director of the research center. I designed and developed novel methodologies for noise removal, image reconstruction, edge detection and object dimension estimation (with micron level accuracy).

This practical experience helped me secure a research internship at the German Aerospace Center (DLR), Göttingen. I worked on the research and development of new non-contact vision based measurement techniques for in-flight measurements. The work comprised of understanding the stereo vision concepts of multi-camera calibration, 3D surface regeneration, image warping, stochastic pattern correlation, and 3D spatial depth estimation (triangulation).

In addition to this, my present thesis at DLR includes research on enhancing the existing workflows and developing algorithms for object recognition, localization and tracking of in-situ designed surface markers from a large image data set employing supervised (machine) learning and deep learning techniques. My internship and master thesis are collectively supervised by Tania Kirmse (DLR, Göttingen) and Dr. Ing Klaus Hartmann (ZESS, University of Siegen). Through my interest in computer vision and its applications, I have kept abreast of current research and product developments in medical imaging, visual computing, ADAS and robotics.

I had developed a personal interest to explore new frontiers of innovation in Computer Vision through research and development. As I would be graduating towards the end of this year, I considered applying for a doctoral position under your esteemed supervision. My credentials as well as my contact information are included in my curriculum vitae attached along with this application. A detailed summary of my work is published on my LinkedIn Profile (<https://www.linkedin.com/in/dineshchandralanka/>).

I would like to cite my manager from the previous employer as one of my professional referee. I would be receiving the academic recommendations’ from my project supervisors by the end of the course. Thank you for considering my application and please let me know if you would like further information regarding my candidacy. I am willing to relocate to Canada and always available for a discussion of my candidature via phone, email or Skype. Thank you for your time and I look forward to hearing from you.

Best Regards,

Dinesh Chandra Lanka