

Computer Senior Seminar Research Paper Proposal

By Matthew Clark

Synopsis: In recent years, due to significant improvements to sensor and processing power and capability, major milestones have been made in the field of autonomous vehicles. As a result, the automotive industry and consumers have developed a deep interest in the substantial socioeconomic impact autonomous vehicles hold. To realize full autonomous driving, the vehicle must have reliable object detection systems. Lidar, cameras, and other proximity sensors are used to make this possible. Much of the research and development is being poured into improving the performance of detecting lanes, signals, road signs, pedestrians, vehicles, and other unexpected objects. Detecting each type of object presents itself with unique challenges, difficulties, and solutions. The analysis of the different object detection techniques for each type of object will provide an effective picture of the state of the field in its current form. Analyzing each technique will require identifying the problems, defining the reliability and robustness, measuring the performance, and evaluating the cost. For the goal of fully autonomous vehicles to be attained any time soon, finding and developing systems with the right hardware and software is vital.

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Helpful tips for writing and publishing a dissertation

- For presentation: identify the known problems
- This article may a good starting point for further research in the field described and reviewed above.
- **Going to conferences** is a wonderful resource for research and networking
 - Builds business connections that could lead to a deepening of resources
- Graduate Journals "*Harvard Graduate Journal*" may be a significant option instead of a top research journals for publication
- The type of journal is different. It is aimed at graduate students to earn credibility for gaining a PHD. There is a way to look up the ranking of journals: scimago – pick a field of research and rate by impact
- Why is my research needed? Why does it matter? What has been done, and what needs to be done?
- Dissertation - Need to prove that what I am presenting is original and/or what has been done is deficient in the field
- Feedback is **KEY** and **get to know the journals in my field**
- Journals sometimes do not always involve proving worth but instead focus on the research and advancements made with the research done. Journals do not need as much of a litature review.