Dissertation Committee Recommendations

for Ahmed Tijani

1. The dissertation document needs to be formatted correctly. There is no abstract. Some figures do not have captions. There are missing tables. There needs to be uniformity in the writing style. Have a separate appendix for each item and give each appendix a title. Follow the template provided by the College of Graduate Studies.
2. Clearly and thoroughly address the questions posed by committee members:
3. Elaborate on what makes your work different from related state-of-the-art work.
4. Provide a more quantitative estimate of reaction time performance versus vehicle speed.
5. Discuss with Dr. Evans the calculation of acceleration and deceleration versus vehicle speed using the Fail-Safe PLC system. Discuss a factory floor control implementation example versus an automobile control example. This would be more easily publishable. Also, see Dr. Evan’s input below.
6. Discuss your plans for future work your area. Elaborate on what you hope to accomplish and why.

From Dr. Evans:

I believe the present work is ok with the addition of a naïve bayes algorithm that could be added to the PLC for determining speed.  This would give both neural network learning and Bayes for the project.  The Bayes could be implemented in the PLC using the two distance sensors Ahmed showed us.  They would be analog inputs that would look ahead of the car and see objects approaching.  Calculate distance away of the object and speed of approach to determine speed or if the vehicle is to completely shut down.  The calculation could be passed through the non-safety portion to the safety portion of the PLC for a guarantee that the operation would be performed.  Ahmed does not actually need to program a safety plc, just demo the Bayes algorithm in the non-safety portion and he would be done in my opinion.  If he is willing to do this, he could finish and we could work at getting the paper published.  I am attaching the two parts needed for him to program this as mentioned.  He could do this from home or wherever and get the project done.  I do not presently know where to publish it but I would work to try to get it published with him.

PLC, cable, and software:

[https://www.studica.com/us/en/SiemensPLM/simatic-s7-1200.html](https://urldefense.com/v3/__https:/www.studica.com/us/en/SiemensPLM/simatic-s7-1200.html__;!!LoBwcKfm!2p8K7OG3q9ZShfFNkKHHeqzfFq_eHoYGTpduQlpCzx8gPzo2H7KD1bP6jIambwXKdzrXK9U$)

**Plus:**

SHNITPWR 24V DC Power Supply 24 Volt 5A 120W Power Adapter 100V~240V AC to DC Converter Transformer 5.5x2.5mm Plug for 5050 3528 LED Strip Light 3D Printer LED Driver CCTV Security System LCD Monitor by [SHNITPWR](https://urldefense.com/v3/__https:/www.amazon.com/SHNITPWR/b/ref=bl_dp_s_web_20326145011?ie=UTF8&node=20326145011&field-lbr_brands_browse-bin=SHNITPWR__;!!LoBwcKfm!1QHOJj5qj-YKLiHbLYv5mcf45okdMzOl2jNEk2zIYFtZoedTRttbUDyPQP2gL8RjVcvPZ7c$)

Has a 4.4 out of 5 stars [48 ratings](https://urldefense.com/v3/__https:/www.amazon.com/SHNITPWR-100V-240V-Converter-Transformer-5-5x2-5mm/dp/B07PWZQ4MB/ref=sr_1_1_sspa?dchild=1&keywords=24v*power*supply&qid=1589208923&sr=8-1-spons&psc=1&spLa=ZW5jcnlwdGVkUXVhbGlmaWVyPUExVVA0TVVHWTE5T05RJmVuY3J5cHRlZElkPUEwNTQwNDQ1SFRJWVU2TEo4V0VNJmVuY3J5cHRlZEFkSWQ9QTA3MjA1MTEzRjhSUEVYQVFUR0Y1JndpZGdldE5hbWU9c3BfYXRmJmFjdGlvbj1jbGlja1JlZGlyZWN0JmRvTm90TG9nQ2xpY2s9dHJ1ZQ==*customerReviews__;Kysj!!LoBwcKfm!1QHOJj5qj-YKLiHbLYv5mcf45okdMzOl2jNEk2zIYFtZoedTRttbUDyPQP2gL8RjatOADW0$) and is Amazon's Choice for "[24v 5a power supply](https://urldefense.com/v3/__https:/www.amazon.com/s/ref=choice_dp_b?keywords=24v*205a*20power*20supply__;JSUl!!LoBwcKfm!1QHOJj5qj-YKLiHbLYv5mcf45okdMzOl2jNEk2zIYFtZoedTRttbUDyPQP2gL8RjzqWLHgk$)"

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