

EE368 Final Project Proposal

Title: Auto Digitizer for Graphic without Manual Clicking

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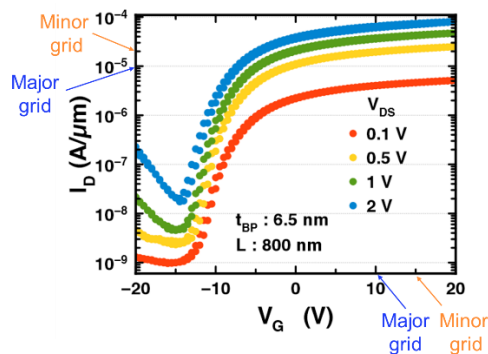
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In many research fields, an accurate bench marketing can improve the communication among each research community. Therefore, we need a digitizer that can covert figures to raw data so we can process data for further analysis. However, the current available digitizer [1][2][3] so far are designed for a very general purpose. All of them require manual clicking for defining axis coordinate and data points. This manual clicking will increase the ambiguity of data interpretation and it's a very time-consuming work. Therefore, it would be very beneficial to develop a faster and more accurate digitizer inside research community.

In this proposal, we want to develop an auto-digitizer without any manual clicking that could contribute data inaccuracy by users. The scope of the project will be focusing on one of the most popular figures on papers of all time: I_D - V_G curve of transistors measurement (as the figure shown below). This auto-digitizer will be helpful for many device researchers that working on improving transistor performance. The ultimate goal of this project is hoping that researchers will examine their graph with this auto-digitizer before publishing and realize how well it can be perceived by readers.

We will use Matlab to develop this auto-digitizer. The Input data is a I_D - V_G curve figure from papers and the output is the extracted points. Moving toward to our goal, firstly, we need to locate major and minor grids on the x-y axis. And then we should recognize data points on the figure, either they are symbols or lines. After this, the basic function of auto-digitizer is satisfied. We will test on more complicated graphs to improve this auto-digitizer.



References:

[1] <http://plotdigitizer.sourceforge.net/>

[2] <https://engauge-digitizer.soft112.com/>

[3] <https://www.originlab.com/doc/Origin-Help/Tool-Digitizer>