THE TECHNOLOGY BEHIND BAR CODES
Part C

Theo Pavlidis, ©2006, 2011

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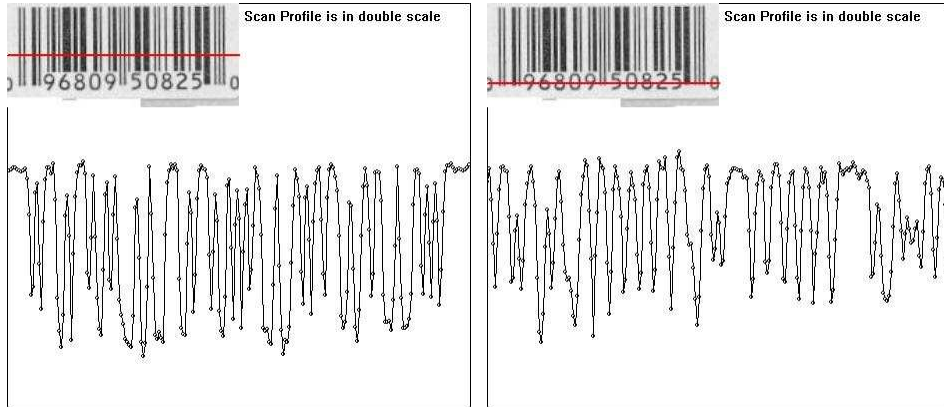**Web site:** www.theopavlidis.com

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Details on How
Bar Codes are Read

- Each of the following slides shows a sample of a bar code (1D or 2D) or text with the intensities along the red line plotted below.
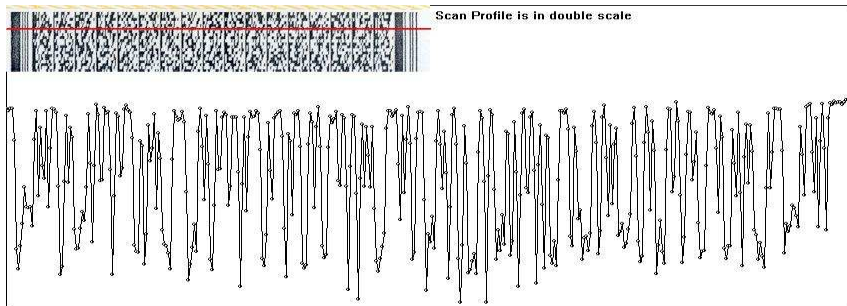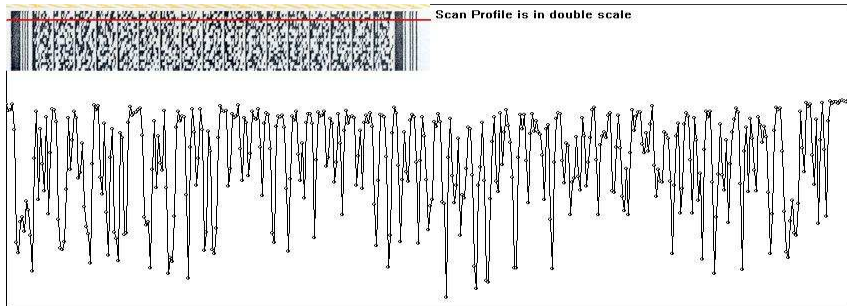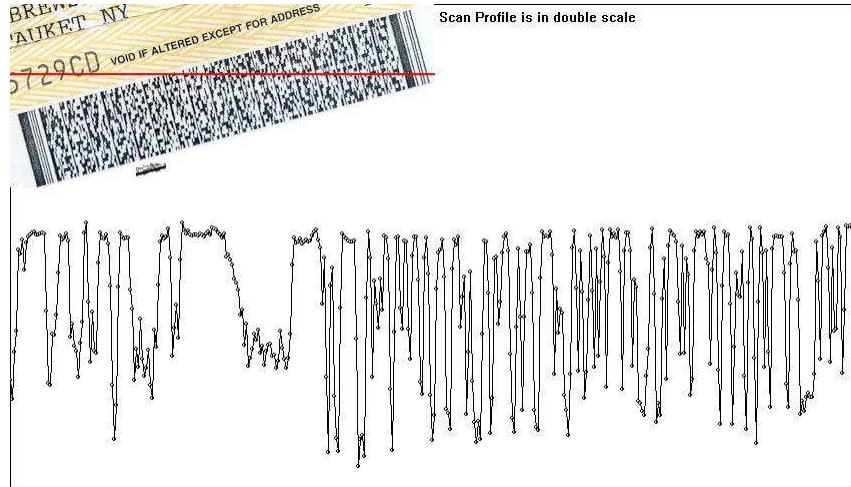
1D Bar Code

Scan Profile is in double scale

96809 50825 0

Scan Profile is in double scale

96809 50825 0

June 2011   OLLI-C   3

Scan Profile is in double scale

Scan Profile is in double scale

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PDF417

Scan Profile is in double scale

PDF417

Scan Profile is in double scale

PDF417

Scan Profile is in double scale

Cell Phone Code

Scan Profile is in double scale

Ship for a fraction
It's one Flat Rat
Scan this cod
free Flat Rate
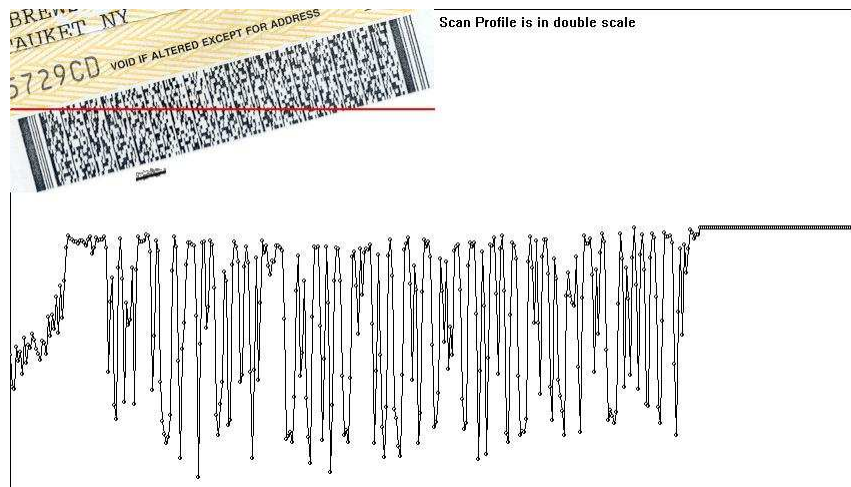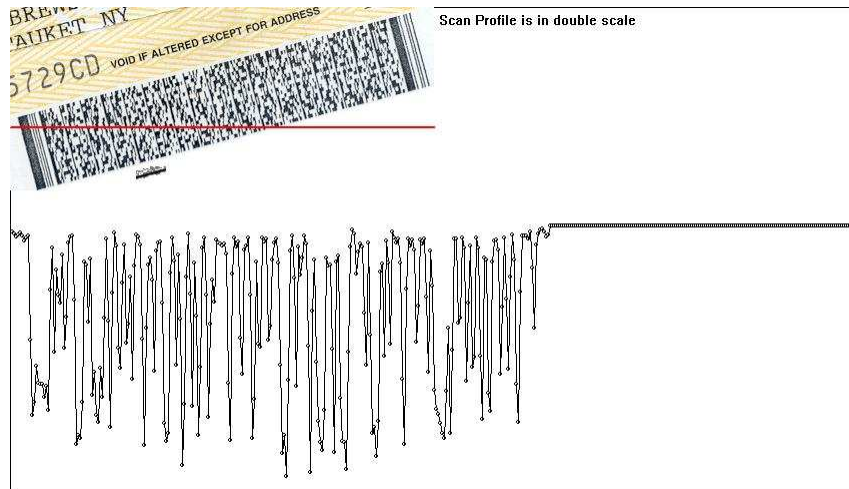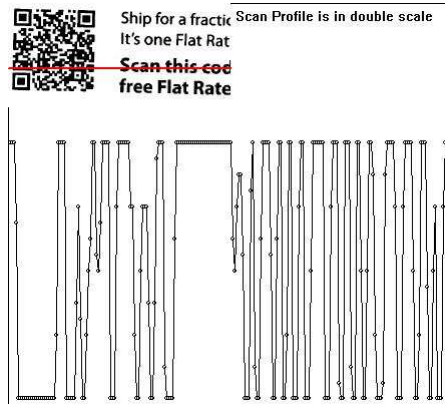
Text

BARCODES
In "Scanning the Future with New Barcodes" (News Briefs, Jan. 2011, p. 20), 2D barcodes are presented as a

Scan Profile is in double scale
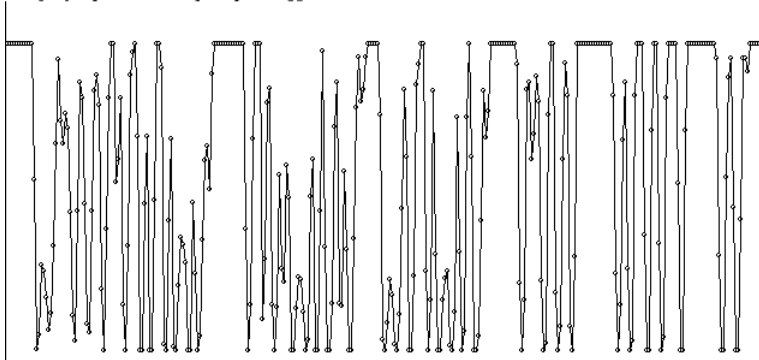
Avoiding the Check-out Line

- RFID
- Personal shopper

RFID

- **R**adio **F**requency **Id**entification has been proposed as an alternative to bar codes. (A resonant chip is attached to an item and no contact scanning is needed.)
- Too expensive compared to bar codes so it seems applicable only to high value items.
  - For example, in Easy-Pass or in parking garage cards

RFID - continued

- *Idea:* Roll the shopping cart next to a station that records all the tags.
- There is a need for tags individualized for each item, not just for each kind of item.
- Problems with radio interference.
- *Conclusion:* It does not work! So RFID does not help the checkout problem

The Personal Shopper

- The *Personal Shopper* is an individual bar code scanner. (You can see it in *Stop-and-Shop* in our area.)
- But it has not found wide acceptance!
- Why?

Trying to Save the Personal Shopper - 1

- A big obstacle to the acceptance of the personal shopper is that there was no way to make sure that customers do not put items in their shopping cars without scanning them.

Trying to Save the Personal Shopper - 2

* While spots checks and surveillance may cut on such theft, the problem remains.

- Because the time and result of each scanned is recorded, people at Symbol believed that data mining could identify shoppers that cheated.

Trying to Save the Personal Shopper - 3

- Unfortunately, there is no social or scientific reason to expect differences between the time series of an honest customer from that of a dishonest customer.

- In addition such data mining was likely to raise privacy issues that might discourage retailers from adopting the personal shopper.

Trying to Save the Personal Shopper - 4

- The final problem.
- Most people do not feel comfortable with the technology, esp. the need to bag and weight produce.
- In the Setauket Stop-and-Shop most personal scanners remain in their case!

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