

# **Vikranth Prabhakar Kanave**

**BSc, PGDiploma, MSc**

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*Embedded digital system postgraduate with management experience in electronic field and excellent understanding of new programming, very ambitious to take the challenges of working in **embedded field***

## **VISA STATUS**

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Applied for PSW permit

## **EDUCATION**

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**2007-2008**

University of Sussex, Falmer Brighton  
**MSc in Embedded Digital Systems- Grade 2:1 (Merit)**

- Core modules included in this course: **Real Time Embedded Systems** Theory and Practical successfully completed on **MilCAN Microcontroller** board based on **Embedded C** programming, **Digital Signal Processing (Advanced)** Theory and Practical. Practical problems based on **Matlab** programming successfully completed
- **High Level IC Design** Theory and Laboratories exercise based on **VHDL** programming successfully completed, **Advanced Microprocessor** Theory and Laboratories exercise completed on **Etrax100 microprocessor** board based on **C** programming
- Under took optional modules comprising includes: **Mobile and Satellite Communication, Advance Network Technologies, Advance Digital Communication** and **Fiber Optic Communication** Theory and Practical

**2006-2007**

University of Mysore, INDIA  
**One Year PG Diploma in Embedded Systems-Grade:-A\*\* (Distinction)**

- Core modules in this course were Digital System Design using **VHDL** Theory and Practical successfully completed by using VHDL, **Embedded Systems Design, VLSI Systems Architecture** and **ASIC Design** Theory successfully completed
- Optional modules included in this course was **8051 Microcontroller, Advance Embedded System Design** Theory and Practical successfully completed

**2003-2006** BSc in Physics, Mathematics, Electronics, Grade – **Merit (2:1)**

**2001-2003** Level Twelve Physics, Chemistry, Mathematics, Electronics, Grade – **C (2:2)**

**2000-2001** Secondary Education SSLC, Grade – **Merit (2:1)**

## **PROJECT DONE IN MSc - MOBILE ROBOT EMPLOYING ARTIFICIAL VISION FOR ROUTE NAVIGATION: GRADE- Distinction (72%)**

Fourth generation mobile robot is designed using *Lego Mindstorm* kit that employs the images acquired from an on-board camera and pattern recognition software to navigate the robot towards objects placed at location on a pre-determined route. ***Optical Pattern Recognition Techniques, match and MACH filters*** employed was employed in this project to achieve the desired goal. The robot is navigated via the specified route to the recognized object. The developed software algorithms are done in MATLAB 7.04 version which supports Image Processing Toolbox. The robot navigated along the path successfully avoiding any route obstacles to the desired object. Object recognition techniques in spatial and frequency domain were used. First, ***Match filter*** was applied in the spatial domain and, then, ***MACH filter*** was applied in the frequency domain for manipulating the correlation plane peak of the recognized object. MACH filter is designed to optimize the matrix called average correlation height (ACH) and minimizing Average Similarity Measure (ASM) as mentioned in chapter 4 MACH filter section. In general practice like Average Correlation Energy (ACE) and Output Noise Variance (ONV) is also to be balanced for better result in different applications. The parameters of Mach filter are " $\alpha$ ", " $\beta$ " and " $\gamma$ ", these parameters can only take non-negative values only. " $\alpha$ " is used for average correlation height, " $\beta$ " is used for average correlation energy and " $\gamma$ " is used for tuning the background. By choosing different values of " $\alpha$ ", " $\beta$ " and " $\gamma$ ", one of the parameter can control OT MACH filter's behavior to suit different applications as required. When  $\beta = 0$  and  $\gamma = 0$  the resultant output shows the filter behaves like ***MVSDF filter*** with good noise tolerance but broad peaks are seen in the plot. By controlling these parameters the ***MACH filter*** can be adjusted to the specified application which for our project was to recognize the true-class object within a cluttered scene and navigate to the recognized target.

## **OTHER PROJECT WORK**

### ***STOP-CLOCK USING ATMEL 89C51 MICROCONTROLLER & SINGLE LINE ALPHANUMERIC LCD DISPLAY:***

I have undertaken this project work in six week training programmer in Technology based Entrepreneurship Development on Embedded systems Development, during June-July 2006 (*Group project, my task was the hardware development*)

### ***DTMF CONTROL HOME AUTOMATION USING PIC16F84A MICROCONTROLLER:***

I have successfully completed this project work using ***CDMA Mobile phone*** in my one year P.G.Diploma in Embedded systems course, during July 2007

During my MSc studies ***Advance Network Technologies*** practical's were done in ***Linux NS software. Advance Digital Communication Matlab/Simulink*** block models was done in MATLAB version 7. ***Fiber Optic communication*** essay based on ***Five generation of Fiber optics, DTMF and current research on optical communication. High Level IC Design***, in this I designed an alarm clock and implemented on ***FPGA using VHDL programming. Real Time Embedded Systems***, in this a ***Infineon CISC microcontroller*** known as ***MILCAN*** was used to perform the tasks such parallel I/O, timers, pulse width modulation, Serial communication with key board of PC and communication between two ***MILCAN*** Microcontrollers was done using ***Embedded C*** language. ***Mobile & Satellite communication*** essay based on ***Architecture and Implementation of Base station in 3G*** was completed. ***Advance Microprocessor Systems***

practical work was done using C language on *ETRAX Microprocessor (RISC skills)*, *Digital Signal Processing* practical's like writing the programs to compute convolution, correlation, FFT, IFFT, DFT and Butterworth Filter was done on *Matlab*.

## **TECHNICAL SKILLS**

<b>COMPUTER DRAWING TOOLS</b>	Corel Draw 8, Adobe Illustrator, Paint Shop Pro
<b>BUSINESS TOOLS</b>	MS Word Processing, MS Excel, MS PowerPoint, MS FrontPage, MS Access (95, 97, 2000, XP), Adobe Acrobat Reader 5, 6 & 7
<b>SCIENTIFIC TOOLS</b>	MATLAB 5, 6 & 7 (Image, Communications, Wavelet, Signal Processing, Neural Networks Toolboxes), SIMULINK 6 (Communications Toolbox and Signal Processing & Communications Blocksets)
<b>PROGRAMMING LANGUAGES</b>	Assembly Language, C, Embedded C, Basic, VHDL, Html, Networking
<b>ELECTRONICS DESIGN PROGRAM ENVIRONMENTS</b>	ModelSim by ModelTech, Xilinx ISE, Dave software for MILCAN Microcontroller, Keil $\mu$ Vision3
<b>OPERATING SYSTEMS</b>	Windows XP, Windows 2000, Windows XP, Linux (xubuntu), MS-DOS
<b>HARDWARE DEVELOPMENT PLATFORMS</b>	8051, Atmel 89C51, PIC 16F82A & MILCAN Microcontrollers, ETRAX 100LX 100Mbit, 8085/86 microprocessors

## **ADDITIONAL QUALIFICATION**

### **EMBEDDED SYSTEMS DEVELOPMENT:**

I have successfully completed this course for eight weeks Technology Based Entrepreneurship Development Program conducted at SJCE-STEP, Mysore during June & July 2006

### **'C' PROGRAMMING:**

I have successfully completed this programming from 1<sup>st</sup> July 2006 to 31<sup>st</sup> Aug 2006 secured A grade

### **WEB DESIGNING:**

I have successfully completed this course on the 22<sup>nd</sup> day of the month October in the year 2004 certified by **ARENA MULTIMEDIA** from kuvempunagar branch, Mysore, India

## **OTHER ACHIEVEMENTS AND AWARDS**

1) In 2008, I got an overall *Merit* and a *Distinction* mark for my final project in my *MSc studies*. In my course I stand 4<sup>th</sup> place out of 18 and 13<sup>th</sup> place out of 80 in class

2) In 2006, I was awarded by *Kanikaparameshwari society* for getting highest marks in *Mathematics* and stood *First* in the *Mysore* district (INDIA)

3) In 2004, the photos taken by me on nature, animals and birds was selected for **DISCOVERY CHANNEL**

4) From first standard till tenth school grade, every year I was getting **first prize** in the **drawing** and **painting** competitions. I have worked with **pencil sketch**, too.

## **WORK EXPERIENCE**

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### ***SRI VENKATESHWARA TRADERS:***

#### ***(MULTI BRAND MOBILE PHONES, SIM CARDS, ACCESSORIES)***

I worked part time as Manager (sale) in this firm during the period from 15<sup>th</sup> May 2004 to 10<sup>th</sup> July 2007

- Dealing With Many Customers
- Looking after finance
- Ordering the stocks, checking the stock balance
- Managed six sales assistants
- I did some sales training for my assistants
- In weekends I was downloading the software to mobile phones
- Knowing the new tariff of sim cards quickly
- Solving the customer's problems as earliest

### ***TELESAMPARK: (MOBILE SHOWROOM)***

I worked part time as Assistant Sales Manager in this firm during the period from 1<sup>st</sup> June 2003 to 28<sup>th</sup> February 2004

- Working with the sales manager to manage staff, manage stock
- Handling Money

Here I worked as a sales man for 2 months due to shortage of staffs

## **PERSONAL SKILLS AND INTERESTS**

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- Playing cricket, volley ball, snookers, bowling; occasionally go swimming and playing foot ball
- Drawing and painting (*Oil painting, water color painting and pencil sketch*)
- Taking photographs of nature, animals and birds
- Listening to music (*Rock and Melodious music*)

## **REFERENCES**

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### ***REFERENCE 1***

**Dr.RUPERT YOUNG BSc, PhD**  
**Head of Department**  
**University of Sussex**  
**Falmer Brighton BN1 9QT**  
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### ***REFERENCE 2***

**Dr Elias Stipidis (CEng, FIET)**  
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