Pallavi Kulkarni

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Education

- San Francisco State University, San Francisco, CA. USA — Jan 2021 - Present
  M.S., **Electrical & Computer Engineering** — GPA: 3/4.0
  Project: *TBD*

- Visvesvaraih Technological University, Belgaum, India — Sept 2001 - Feb '08
  B.E.,**Electronics & Communications Engineering** — GPA: /100

Graduate Coursework

Hardware for Machine Learning	Neural Machine Interface
Embedded Systems	Advanced Digital Design
Advanced Computer Communication & Networks	Computer Systems

Graduate Course Projects

Comparison of Machine Learning Methods on EMG data of Hand Gestures using Matlab
Course: **Neural Machine Interface** — Jan 2021 May 2021

- Aim of the project is to compare the performance of the Machine learning methods on the Electromyographic (EMG) data of hand gestures. Data has been obtained using 8 channel Myo armband at 200 Hz data-rate for an average of 1.1s. Seven gestures repeated for six times by one subject are chosen for the study. Four time-domain features namely mean absolute value(MAV), zero crossing(ZC), sign slope change(SSC) or turn count (TC) and Willison amplitude value (WAV) are extracted from the raw EMG data for each channel. Four classification models namely Linear Discriminant Analysis, Naive Bayes, Support Vector Machine and K-Nearest Neighbor are used for training and testing. Finally accuracy of both training and testing of the methods are compared. KNN provided the best accuracy of 98.4% during training while SVM provided the best accuracy of 96.06% during testing. Overall SVM provided the best accuracy of 95.1% and 96.06% during both training and testing respectively.

Tiva Network Tester
Course: **Embedded Systems** — Aug 2021 Dec 2021

- This project contains a basic network stack and shell for the Tiva C-series microcontrollers. The shell contains the following commands:
  ping - Pings and IPv4 address.
  arp - Looks up the IPv4 address of a MAC address.
  raw - Toggles raw printing of Ethernet frames.
  ipconfig - Displays IPv4 configuration.
  setip - Sets IPv4 address.
  setsub - Sets IPv4 subnet.
  setgw - Sets IPv4 gateway.
  help - Prints available comands.
  uptime - Reports time that Tiva has been on the network.

ASIC Implementation of Motion Estimator in 32/28nm CMOS
Course: **Advanced Digital Design** Aug 2021 Dec 2021

- Motion estimation is one of the key components of high compression video codecs. The most popular algorithm for motion estimation is block matching algorithm due to simple hardware implementation. The goal in this project is to design the motion estimator from HDL to GDS in the 32/28nm CMOS technology.

Skills

Platforms (Desktop and Server)	Windows, Linux(Ubuntu, Redhat, Fedora, CentOS, AWS Linux, Kali, Solaris 11).
Programming Languages	C, C++, MATLAB, Python, PHP, HTML, Golang,UNIX shell scripting.
Databases and tools	MySQL, SQLyog, phpMyAdmin.
Linux based tools	gdb, gcc, make, disk formatting (fdisk, cfdisk), System monitoring tools (top, atop, SAR), rsync, cron, minicom (serial communication), arm-gcc (ARM Cross compiler), SVN, Git (Bitbucket).
Assembly Languages	Microprocessors: 8085, 8086; Microcontrollers: 8051, ARM M3.
Tools	Visual Studio, LaTeX, MS Word.
Web server Environment	(X/W)AMP, LAMP, Apache-Tomcat, Moodle based LMS, IIS.

Area of Interests

- Machine Learning
- Embedded Systems Security
- IoT Security

Work Experience

Consultant, Bangalore
Developer & Server Administrator July 2016 - Present

- Implement Software based process automations, upgradations and inventory.
  PHP based applications (auto mailing module, Portal for Invoice Bidding).
  Macro implementation for automating Excel tasks.
- Successfully handled transitioning of the Datacenter, set up for Banking application
  Hardware included following servers: RHEL based CISCO UCS 240 M4, Solaris based Oracle T7-1 and Oracle Super cluster M7-8.
  Audited the implementation of all the 3 above mentioned category of servers, got resolved the implementation risks, KT to the sustenance team for further monitoring of the servers.
- Setup and maintain hardware, cloud, and software infrastructure for Banking customer
  OS and configuration: LAMP and Apache-Tomcat server, Windows based Apache-Tomcat servers for Java and PHP based Web application development and deployment on Test and Production servers in-house, and cloud environments (GoDaddy).
  Additional roles include backup, restoration, and database management
  Tools and languages: *Java, PHP, Git, Oracle Virtualbox, Windows RDP, Vmware, Putty*

ASM Technologies, Bangalore
Learning Facilitator Aug 2015 - July '16

- **Training:**
  Single Point of Contact(SPoC) for Embedded training deliveries, handled training sessions on Linux basics commands and Shell scripting for embedded development, Infra Management Service Batches.
- Setting up of Ubuntu based LAMP and Apache-Tomcat servers for Web application deployment on Test and Production servers, and cloud environments (AWS, Linode, Go4Hosting, and Netmagic Cloud environments)
- Financial Office Automation System (Java, MYSQL based Taxation and Auditing implementation).
  Database updates on the Production server, Customer coordination, Field trials, Release Management – complete process of Server Installation to Application deployment and Management on both the Test and Production Servers. **Tools and languages:** *Java, MySQL, Git*

Vimarshana Technology Solutions Pvt. Ltd., Bangalore
Learning Facilitator Aug 2011 - Aug '15
Assistant Learning Facilitator Jan 2010 - Jul '11
Research Associate Aug 2009 - Jan '10

- **Projects and management:**
  Computer Vision project – Pattern Matching by Correlating Pixels of an Image, implemented algorithm on Matlab, and simulated a prototype product using LabVIEW's Image processing toolbox.
  Lifescapes (PHP, MYSQL based Real Estate) – My role: Versioning, Testing, Customer coordination, Field trials, Release Management, Server setup on AWS and Application deployment.
  Subscriber Management Billing System (PHP, MYSQL based Telecom Billing System) – My role: Versioning, Testing, Design documentation, Customer coordination, Field trials, Release Management.
  CRM (Java, MYSQL based Process Management) – My role: Versioning, Release Management, Application deployment on Production Server along with DB Migration.
- **Training:**
  With being the Single Point of Contact(SPoC) for various training deliveries, had handled trainings on Golang, Linux basics commands and Shell scripting for development, HTML with PHP, C, L2/L3 Telecom Protocol testing and Infra Management Service Batches.
  Offered training on Linux kernel porting to the Devkit8000 (OMAP3 – ARM Cortex-A8+C64x) board, and Embedded Boot-loaders (xloader, U-boot).
  CDAC Training Coordinator – managing the Training, Feedback, Assessment, Project Evaluation and Placement processes.
  Tools and languages: *Matlab, LabVIEW, Java, PHP, MySQL, SVN*

Awards and Fellowships

1. Full scholarship from Govt. of Karnataka and Govt. of India towards Middle and High school education.
   1994-1999

Certifications and Activities

1. Presented a technical seminar on **"MEMS Micro-manipulators"**.
2. **Advanced Diploma Course** in **RTOS** from Cranes International Ltd.
3. Certification in **Information Systems Management** from APTECH (Webpage Deign and Publishing using FP 2000).