



PEJMAN TASLIMI

R&D, Embedded Systems

PROFILE

NAME

Pejman Taslimi
/pejman tæsliɪmi/

DATE OF BIRTH
22 October 1983

WEBSITE
taslimi.us 

LINKEDIN
pejman-taslimi 

GITHUB
manimx 

LANGUAGES

Persian (Native)
English (Fluent)
German (B1+)

ABILITIES

Algorithm Development
Statistical Estimation, DSP
MATLAB/Octave
Embedded C, x86 C/C++
Perl, Javascript
PCB Design

CONTACT

LOCATION
Eindhoven, NL 

PHONE
+31 6 4858 2025 

EMAIL
cv@taslimi.us 

WORK EXPERIENCE

IRAN HEALTH INSURANCE ORGANISATION
01/2020 - present
en.ihio.gov.ir

Software Designer

- **Team:** 100+ **Topic:** Enterprise Software
- **My role:**
 - Design from **Idea to Specification**
 - Code review and **QA**
 - Security and Performance evaluation
- Tech-stack: .Net, Java, PHP

JOOBEEN.COM
04/2010 - 12/2019
9 yrs 9 mos
joobeen.com

Developers Team Lead

- **Team:** 10 **Topic:** Embedded Products
- **My role:**
 - Design from **Idea to Specification**
 - **coding** Perl, C, C++, JS, MATLAB, Sh
 - Config/Design Linux services
 - Test design, **QA**
- Node-side: **Embedded Linux** (Fedora, Gentoo, Rasbian), **RaspberryPI** family, Microchip **PIC32 PIC8** families, Embedded C
- Server-side: Perl, PHP, JS, Node, C, C++, Container-based Micro-services
- **Some Projects:**
 - City-wide IP Public Address, with Mechanisms for (self/remote diagnostics, OTA firmware/software update)
 - VoIP Hot Billing
 - Centralised Biometric Authentication
 - Controllable Intelligent Power Distribution Unit, with and aggregated Control/Monitoring Panel

TEHRAN MUNICIPALITY ICT ORGANIZATION
01/2012 - 03/2019
6 yrs 10 mos - Part-time
tmicto.tehran.ir

Embedded Systems Specialist -

- Conduct **Feasibility Study**
- Designing **Prototype systems**
- Analyse **Network Security** for breaches and improvements

ICT INNOVATION CENTER SHARIF UNIVERSITY OF TECHNOLOGY
10/2005 - 07/2008
2 yrs 10 mos
ictic.sharif.edu

Signal Processing Researcher

- **Algorithm development** (MATLAB/Octave)
- Data acquisition and analysis
- **Algorithm implementation** (embedded C)

KIATECH CO.
07/2007 - 03/2008
9 months - Part-time

Embedded Linux Developer

- **Team size:** 4
- **Embedded Gentoo Linux**, Layered FS
- UI Design; GTK, Browser-based
- Network boot, Auto-deployment

VABEL PARDAZ
06/2002 - 09/2003
1 yrs 3 mos - Part-time

Embedded Designer, Programmer

- **Team size:** 4
- Schematic Design, Controllers, FPGA/CPLDs
- Micro-Controller (ATMEL, Microchip) **Assembly/C Programming**

RECENT TASKS

Software Review and Test Design
Daily

Linux Administration
Daily

Net-Traffic Classification
(Research, C++)

Feature Extraction, CNN (Python, Colab)

Machine Learning, Octave
weekly

Data Manipulation, Perl, Regex
weekly

DOCS

GOETHE-Zertifikat B1
Oct 2019

Swim Coach - Level 2
Nov 2018

Athletic Coach - D3
Aug 2017

Swim Coach - Level 3
Feb 2016

Kart Driving License Grade B
Jan 2015

Kart Driving License Grade C
Nov 2014

Lifeguard Certificate - Level 2
Sep 2013

Volunteer Firefighter Licence
Jul 2013

Entrepreneurship skills (Labour & Social Security Institute)
Jul 2007



EDUCATION

UNIVERSITY
TEHRAN
2020 - 2022
ut.ac.ir

OF

MSc Electrical Eng. Comm. Systems

Thesis: Vehicle 3D modelling from Fisheye images

Focus: Machine Learning, Image Processing, Structure from Motion

AMIRKABIR UNIVERSITY OF TECHNOLOGY
2008 - 2010
aut.ac.ir

MSc Electrical Eng. ICT

Thesis: Difference of Arrival Estimation

Focus: Accoustic Waves, Statistical Analysis, Array Processing, Signal Processing

SHAHED UNIVERSITY OF TEHRAN
2002 - 2006
shahed.ac.ir

BSc Electrical Eng. Comm. Systems

Thesis: Acoustic Path Identification and Modelling (in Active Noise Control systems)

Focus: Acoustic waves, Signal Processing



PERSONAL SKILLS

Programming

C++: Profiling, **C++17**, CMake C: Valgrind, GDB

embedded C: AVR, PIC, PICdsp, TI DSP (Fixed/Float)

Perl: Object-oriented, Regex, XS

JS: DOM, Event driven programming, jQuery, Node.js

Assembly: Controllers, DSP, ARM, **Peripheral Control** (inline)

Research, Algorithm development

MATLAB/Octave, algorithm development and optimisation

Signal Processing, Industrial Control

Electronic Design

Schematic/PCB design (Altium)

Sample production, Soldering and Finalising

Linux

embedded Linux, Gentoo Linux: Bootstrap, CrossCompile

Advanced Linux Administration: NetFilter, DevMapper, LogRotate, Ansible, PK security, SELinux, Emacs, VSCode . . .

Database

Database: DB Maintenance, **Query Design and Analysis**

Data modelling, **Data Warehouse Design**, TSDB, In-memory DB

PostgresQL, SQLite, Oracle, Redis, Memcached . . .

Development

Source Control: Subversion, Git,

Versioning Strategy: Release branch, Short-lived Feature branch

Design Architecture: **Service-oriented**,

Functional or Object-oriented, **Multitier** or MVC

IPC, Socket, Rest, Design Patterns

Networking

Design **Network Routing**, Firewall, WAF

Design and improve **Network Security** by Honeypot, Service Decomposition, Data Diode, Tunnel Triggering

Infrastructure

Total **On-premise** Infrastructure Setup

Reverse Proxy, High Availability, Scaling via Docker/Podman

Decoupling **DevOps, RunOps:** Disaster Recovery, Site Reliability

Project Control

Scrum/XP, Unit test, **Test-driven Dev**, Doc Management

Project Partitioning (Developer Group Isolation)

Personal

Debug Complex **Multidisciplinary** Systems with either **deep or broad knowledge** in all related fields.

I've always got some *ideas!*

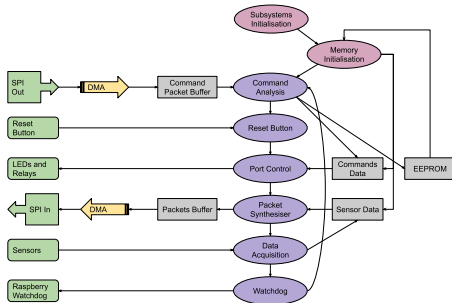


☑ SOME OF MY PROJECTS

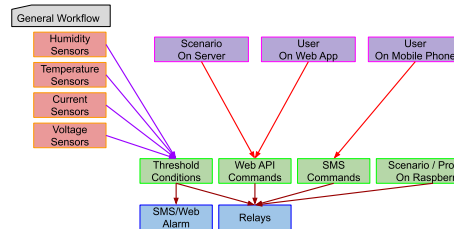
PDU 2017

Power Distribution Unit, with the ability to evaluate operation states of the connected devices by analysis of their power (current) consumption, and decide on further measures. PDU can follow different scenarios based on each system state, temperature, humidity, network connectivity and other parameters. Used in communication tower racks to restart radio transceivers in the case of failure.

Device
 Altium Designer
 Embedded C
 PIC mC/dsp
 Raspberry Pie
 Industrial Design (Solid Works)
 Firmware
 C++
 Perl
 jQuery UI
 Server
 Lighttpd FCGI
 Perl
 Vue.js
 Methodologies
 Multitier Software
 Microservice
 Hardware/Software Co-Design



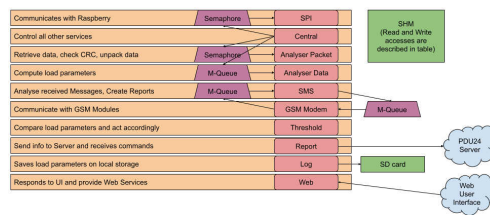
Controller Firmware



General Workflow



Hardware



Raspberry Software

Centralised Biometric Authentication 2016

In Tehran Municipality with tens of thousands of employees, there is the need for a centralised Time Attendance, so employees and move between building (on assigned duty) and being identified.

For privacy and security reasons, no user info should be kept locally. This system receives raw biometric (Fingerprint and Iris) info and do the matching, authentication and authorisation on the server in less than 100ms.

Also exists some branch servers working in a federation for the case of network instability. The project uses fingerprint sensors of 3 predefined brands, iris scanner of one brand and a commercial matching library.

Services
 Perl
 Algorithm
 Perl
 C (XS)
 UI
 Node.js Express

City-wide IP Public Address 2011

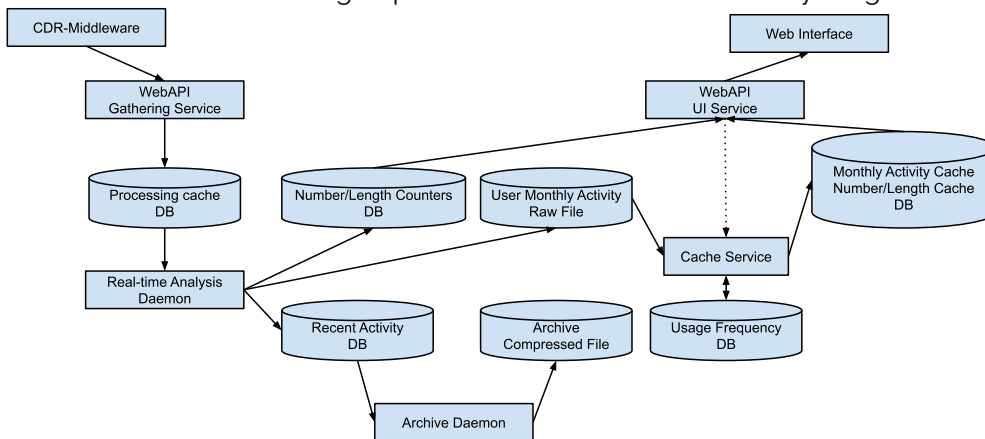
Installed in Tehran in approx. 1000 nodes.
 Each node includes a health monitoring system for amplifier and speaker.



Services
 Perl
 Lighttpd FCGI
 Clients
 Perl
 C
 x86 embedded Linux
 UI
 ExtJS
 Bootstrap
 jQuery
 Methodology
 Service Oriented Design

Telecom Hot Billing2017

The system nicknamed CPNI, collects usage data from 3 different Voip networks (Asterisk, Mitel, Siemens), Microsoft UC, Fax switches and Radio Communication Network. The software then aggregate all data, creates summary and details bill for individual users and groups. It also sends emails of monthly usage bills.



CPNI DB and Data Warehouse

Engine/Services

Perl

C++ (XS)

UI

Angular

Methodologies

Micro-Services

Data-Warehouse

Complete in-house-built

Devops

Time-series DB

Rack Access Control2016

Adding physical locks (Magnetic, Magnet Actuator, Solenoid) and RFID scanners to racks, to control the access to the racks.

A request is registered in the system, managers confirm the time and ranges of racks, users identify themselves at the main door by fingerprint, then by RFID card at the rack door.

The main purpose is to prevent mistakes in accessing server. The system is installed in Tehran Municipality Data Centre.

Server

Lighttpd FCGI

Perl

jQuery (Bootstrap)

Door Controller

Electronic Design

Single SignOn T-OTP2013

Creating from scratch: Single Sign-On with OAuth2, One-time Password, Authenticator Enrolment QR-code

Server

Lighttpd FCGI

Perl

jQuery (Bootstrap)

Nurse Calling System2013

Android app, call button unit, alarm sound unit, VoIP integrated.

Live Gateway2012

System parts: 1. DVB-S Unit, 2. Central Server

To provide a stable TV or Radio reception link, the server receives channel stream of the same transponder from multiple sources (multiple Satellite, multiple ground location), even with different latencies.

The system collects data from all streams, extract MPEG2-TS packets, order them in a unique buffer per transponder and resemble the output from this buffer.

Server

Perl

C++

Unicast Restreamer2012

The system receives source streams, and provides them to huge number of clients, while it performs Authentication, Authorisation and Accounting.

System Performance: 2000x 4Mb output streams on a 10Gb Fibre

System Requirements: 2x Intel Xeon Quad Core, 8 MB per connection

Service

Perl

UI

ExtJS

Bootstrap

Depth of Anaesthesia Quantification2008

Signal Processing Research

Algorithm Development in MATLAB

Algorithm Implementation in C

PUBLICATIONS

- P. Taslimi, S. Pourpanahi and B. Aboutalebian, "Quantification of Regional Blockage Probability and Compensation Effects on Automatic Signal Controllers in Oversaturated Conditions," 2019 Amity International Conference on Artificial Intelligence (AICAI), Dubai, United Arab Emirates, 2019, pp. 659-665, doi:10.1109/AICAI.2019.8701354 **Best Paper Award**
- Taslimi, P.; Rabiee, H.R.; Shakouri, G.H., (2009) "An empirical centre assignment in RBF network for quantification of anaesthesia using wavelet-domain features," Neural Engineering, 2009. NER '09. 4th International IEEE/EMBS Conference on , vol., no., pp.510-513, April 29 2009-May 2 2009 doi:10.1109/NER.2009.5109345 **Best in Session**
- Gifani, P.; Rabiee, H.R.; Hashemi, M.R.; Taslimi, P.; Ghanbari, M., "Nonlinear Analysis of Anesthesia Dynamics by Fractal Scaling Exponent," Engineering in Medicine and Biology Society, 2006. EMBS '06. 28th Annual International Conference of the IEEE , vol., no., pp.6225-6228, Aug. 30 2006-Sept. 3 2006 doi:10.1109/IEMBS.2006.260501
- Gifani, P.; Rabiee, H.R.; Hashemi, M.H; Momenzadeh, S.; Taslimi, P.; Ghanbari, M., "Power-Law Correlation in Human EEG at Various Anaesthesia Depths," Advances in Medical, Signal and Information Processing, 2006. MEDSIP 2006. IET 3rd International Conference On , vol., no., pp.1-4, 17-19 July 2006 IEEE Xplore
- P. Gifani; H.R. Rabiee; M.H Hashemi; S. Momen zadeh; P. Taslimi; M. Ghanbari, "Optimal Fractal Scaling Analysis of Human EEG Dynamic For Depth of Anesthesia Quantification," Journal of the Franklin Institute, Special Issue on Applications of Signal Processing, Elsevier Volume 335B, Number 8, 2007 doi:10.1016/j.jfranklin.2006.08.004

VERSION HISTORY

- 2006-09-28 - Date of creation of this document (based on "postgraduate online research training", School of Advanced Study, www.sas.ac.uk)
- 2007-08-23 - Update
- 2007-09-02 - Update
- 2007-12-21 - Revise (based on "HOW TO Prepare Your Curriculum Vitae", McGraw-Hill)
- 2008-08-12 - Update
- 2009-01-25 - Update
- 2009-02-23 - Update
- 2009-11-22 - Convert to TeX format and Update
- 2020-12-05 - Rewrite with ideas from github.com/jankapunkt/latexcv and mycvstore.com

The End

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