PEDRO IVAN LOPEZ

ENGINEER

ABOUT

Software engineer. Master's degree in Information Systems Engineering.

WORK EXPERIENCE

Meta Platforms, Inc.

08/23/2021 – Present

Software Engineer

1 Hacker Way
Menlo Park
CA
94025
United States of America

Highlights

- Help build the next generation of systems behind Meta's products, create web and/or mobile applications that reach over two billion people, and build high volume servers to support content.
- Harness passion for technology and help build highly scalable performant solutions.
- Develop knowledge of algorithms and computer science concepts and ability to apply that knowledge to real world systems and production problems, taking architectural decisions.
- Employ specialty knowledge across the following areas: data processing, programming languages, databases, networking, and operating systems.
- Utilize knowledge of database management system software, development environment software, object oriented development software, program testing software, operating system software, and various programming languages.
- Utilize knowledge of computer hardware and software, including applications and programming, and of systems architecture and components, including networking and storage.
- Building large-scale infrastructure applications

- Designing and completing medium to large features independently without guidance
- Experience owning a particular component, feature or system
- Environment: Python, Haskell, PHP, Hack, SQL, Apache Thrift, Presto, Apache Hive.

Epicor Software Corporation

02/07/2017 – 08/13/2021

Software Developer

Boulevard Antonio L. Rodríguez #1882 Plaza Sur
Col Sta. María
Monterrey, Nuevo Leon
Mexico
CP 64650

As a Software Developer of the Custom Solutions Group, I worked on extending our base products to better fit the business requirements of customers in North and South America. My role also involved project management responsibilities and technical tasks on a wide range of technologies of the Epicor ICE Framework and ERP 10 platform.

Highlights

- Reduced execution time of mass update by 90% by porting business logic from client to server, and by porting database access from Entity Framework to stored procedures in T-SQL
- Achieved the highest billable utilization out of all engineers and software architects of the Mexican team in FY2019
- One of the top 10 employees of the Monterrey branch in Q4 2019, recognized by the company for making a significant business impact and demonstrating corporate core values
- Delivered the first mobile access dashboard solution of the Mexico branch, a responsive HTML5 client with C#/.NET on the backend
- Developed 18 custom electronic interfaces for the ACH network and Positive Pay bank services
- Wrote T-SQL code generators in Python for data/schema definition and data querying
- Created 15 new forms/modules for the Epicor ERP
- Customized financial, supply chain and manufacturing modules of the Epicor ERP system 10+
- Close and direct communication with customers
- Worked on most of the technologies of the Epicor 10 platform, especially with client & server ICE SDK projects

- Enabled functional testing previously blocked by the corruption of test data, by restoring 22 million records to 15 relational database tables from database backups
- Led engineers in upgrading multiple product customizations from Epicor 10.1 to 10.2
- Performed onboarding of new senior resource by mentoring work on an assigned project
- Eased troubleshooting of delivered products deployed on customer's site, by shipping software with optional diagnostic tracing
- Environment: .NET 4.7.2, C# 7.3, LINQ, Entity Framework 6, LINQ to Entities, LINQ to XML, Infragistics, Epicor Internet Component Environment (ICE SDK & ICE Tools), T-SQL for SQL Server 2016, Visual Studio 2019, JIRA, Service Connect, Windows Subsystem for Linux, Windows Server 2012, Windows 10

Infosys Ltd

01/14/2013 – 02/13/2015

Systems Engineer

Corporativo Santa Maria
No. 130 Boulevard Díaz Ordaz
18th Floor, Col. Santa Maria
Monterrey, Nuevo León
Mexico
CP 64650
Phone +52 81 8850 9300
Fax +52 81 8850 9301

Monterrey, Nuevo León, Mexico. Contractor for a Fortune 100 multinational banking and financial services corporation. Development, administration and support team for a global trade finance application used mainly in North America and Asia

Highlights

- Coded and tested new agents/batch-jobs or new features of existing jobs in Java, C#, JavaScript and Windows Batch
- Designed and implemented a Windows Script Host script in JavaScript to retrieve scanned image and metadata files from the scanner workstations to our server and prepare for further processing
- Fixed approximately 350 incidents, including code bugs, development of new features, customers with invalid data in production and outages
- On-call primary contact for approximately 20 weeks
- Led approximately 30 Request For Change procedures, mainly to install code updates and to update data via SQL scripts
- Supported production and test environments for clients and other teams in the bank

- Knowledge management via documentation of known issues and fixes, to coach offshore resources
- Environment: Java, .NET, C#, JavaScript, SQL, Bash, Hibernate, Spring, Eclipse, Toad, ClearCase, RedHat Linux, Windows Server, Autosys, Windows Script Host

Self-employment/Freelancing

02/01/2015 – 12/01/2016

Freelance Consultant

Rincón de los Cedros 216
Col. Rincón de Anáhuac
San Nicolás de los Garza, Nuevo León
México
CP 66422

Coached job applicants and students on computer science and software engineering topics.

Highlights

- Designed custom study plans based on assessment of the client's knowledge and skills via tests and interviews
- Did one-on-one mock interviews and provided feedback afterward
- Published implementations of data structures, algorithms, and solutions to programming problems. See Data structures and algorithms in C#, Software engineering problems in JavaScript. Software engineering problems in C#, pysweng: Software engineering problems in Python, Data structures and algorithms in JavaScript
- Environment: Java, C#, Python, JavaScript, Node.js, .NET Core, Visual Studio Code, xUnit, JUnit, Mocha, Maven

Self-employment/Freelancing

02/01/2015 – 12/01/2016

Technical Writer

Rincón de los Cedros 216
Col. Rincón de Anáhuac
San Nicolás de los Garza, Nuevo León
México
CP 66422

Wrote technical documentation on topics such as programming, system administration, audio and video processing and production and security

Highlights

- Published more than 45 technical notes at http://pedroivanlopez.com/tech-notes

Some of the software tools and applications I wrote about are Fedora Linux, FFmpeg, Windows, Python, JavaScript, Node.js, OpenSSH, Git, Android, Anki, Cygwin, Audacity, among others

Environment: Jekyll, Markdown, Fedora, Windows, Python

Center for the Development of the Software Industry

10/01/2012 – 01/31/2013

Software Engineer

Loma Redonda 1515 Poniente
Colonia Loma Larga
Monterrey, Nuevo León
México
C.P. 64710
+52 (81)83-29-4000 Ext. 7750

Tested and validated a financial web application and platform

Highlights

Performed testing and quality assurance of an enterprise financial Web platform for a Mexican bank, implemented in Java Enterprise Edition and JavaScript

Types of tests performed: black box, system, functional, acceptance

Environment: Internet Explorer, Mozilla Firefox, Excel, JavaScript

School of Physics and Mathematics at Universidad Autónoma de Nuevo León

08/01/2011 – 02/28/2012

Research Assistant

Ciudad Universitaria, Pedro de Alba s/n
San Nicolás de los Garza, Nuevo León
México
C.P. 66455
+52 (81) 8329-4000

Internship. Research topics: control engineering, robust control, linear systems, filters.

Highlights

Developed and maintained robust control systems software in Python, MATLAB and Simulink

Co-authored one published paper: Basin, M.; Serna, M.; Lopez-Hernandez, P.I., Central energy-to-peak filter design for uncertain linear systems, Control Conference (ASCC), June 2013

Performed system administration of workstations and maintenance of hardware units

Environment: Python, MATLAB, LabVIEW, NI Elvis, LaTeX

School of Mechanical and Electrical Engineering at Universidad Autónoma de Nuevo León
02/01/2012 – 08/31/2012

Laboratory Assistant
Ciudad Universitaria, Pedro de Alba s/n
San Nicolás de los Garza, Nuevo León
México
C.P. 66455
+52 (81) 8329-4000

Internship.

Highlights

- Supported students in designing and troubleshooting programs in Python, MATLAB and LabVIEW
- Performed system administration of workstations and maintenance of hardware units
- Assisted professors with teaching electronics and programming during laboratory sessions
- Environment: Python, MATLAB, LabVIEW, NI Elvis, LaTeX, BASIC

AWARDS

September 2012

Autonomous University of Nuevo León
Mención Honorífica de Excelencia

Award given to students that graduated with overall grade of 95/100 or more

VOLUNTEER

ASPNET5CO
http://pedroivanlopez.com/aspnet5co
04/02/2015 – Present

Advocacy and Community. Efforts to advocate the ASP.NET Core framework

Data structures and algorithms in C#
https://github.com/lopezpdvn/DataStructuresAlgorithmsCSharp
06/26/2015 – Present

Data structures and algorithms in C#

mazerob

http://pedroivanlopez.com/mazerob

07/15/2015 – Present

Bluetooth-remote-control robot implemented with Java Virtual Machines on a PC and a Lego NXT Brick

printer73x

http://pedroivanlopez.com/printer73x

12/03/2011 – Present

A computer numerical control system for printing binary images

cerca

http://pedroivanlopez.com/cerca

11/02/2012 – Present

A distance measurement system running on a personal computer and an 8-bit microcontroller

pysyspol

https://github.com/lopezpdvn/pysyspol

06/11/2016 – Present

Cross-platform system policy for applications and environments, with Python

syspol-js

https://github.com/lopezpdvn/syspol-js

12/26/2015 – Present

Cross-platform system policy for applications and environments, with JavaScript

dotfiles

https://github.com/lopezpdvn/dotfiles

07/27/2015 – Present

Miscellaneous configuration files and directories

Software engineering problems in C#

https://github.com/lopezpdvn/SoftwareEngineeringProblemsCSharp

08/06/2015 – Present

Software engineering problems in C#

resources-viewer

https://github.com/lopezpdvn/resources-viewer

08/24/2015 – Present

Browser based static app for viewing resources

timeman

https://github.com/lopezpdvn/timeman
07/06/2016 – Present

Simple time management types

syspol

https://github.com/lopezpdvn/syspol
08/09/2015 – Present

Cross-platform system policy for applications and environments

swebserv

https://github.com/lopezpdvn/swebserv
07/09/2013 – Present

Java program that simulates Denial-of-service attacks on HTTP/web servers

– Present

For other projects see my technical notes, as well as my Github and Gist profiles.

CONTACT

m@pedroivanlopez.com

GitHub
lopezpdvn
LeetCode
lopezpdvn
LinkedIn
pedroivanlopez

EDUCATION

01/01/2013
01/01/2015

Universidad Autónoma de Nuevo León

Master of Science

Information Systems Engineering

GPA: 4.0 = 94.5/100.0

Courses

Research Methodology

- Quantitative Methods (Statistics)
- Discrete Mathematics for Geometric Design
- Programming and Simulation
- Information Systems
- Object Oriented Programming
- Database Management and Design
- E-Business Oriented Information Systems
- Computer Science Seminar
- Management of Information Technology Projects
- Technologies for Internet Information Security
- Technologies for Organizational Change
- Information Technology Management and Planning
- Decision Support Systems
- Human–computer Interaction

01/01/2006
06/30/2012

Autonomous University of Nuevo León

🎓 Bachelor

Mechatronic Engineering. Intelligent Machines Design. Mención Honorífica de Excelencia.

GPA: 4.0 = 95.9/100.0

Courses

- Basic Programming
- Probability and Statistics
- Discrete Mathematics
- Data Structures
- Advanced Programming
- Theoretical Computer Science
- Digital Electronics

- Object Oriented Programming
- Data Acquisition
- Robot Architecture
- Artificial Intelligence and Neural Networks
- Project Management
- Human–Computer Interaction
- Machine Vision
- Perception
- Machine Perception

SKILLS

Languages

JavaScript · C# · TypeScript · Python · LINQ · Java · SQL · Hack · Haskell · HTML · CSS · Bash/UNIX Shell Scripting · VB.NET · MATLAB · LabVIEW · XSLT · LaTeX

Data/Databases

Hive · Presto · Microsoft SQL Server · Entity Framework 6 · Oracle · MySQL · SQLite · JSON · YAML · XML

Technologies

.NET 4.7.2 · LINQ to Entities · LINQ to XML · Infragistics · Epicor Internet Component Environment (ICE SDK & ICE Tools) · Java · Node.js · xUnit · Jekyll · ASP.NET 4 & 5 · ASP.NET MVC 5 · Docker · Spring · Hibernate · ASP.NET Web Forms · Java EE · Sphinx documentation tools · IejOS

Design patterns

Dependency Injection · Object-Relational Mapping (ORM) · Module · Factory method · Iterator · Reactor · Singleton · Observer

Architectural patterns

Inversion of Control · Event-driven architecture · Model–View–Controller

Applications

Microsoft Visual Studio · Visual Studio Code · Git · ClearCase · Toad · Eclipse · Cygwin · Vim · GNU Make · Ant · IPython · OpenSSH · Maven

Operating Systems

UNIX (Fedora, Ubuntu, Red Hat Enterprise Linux, Android) | Microsoft Windows (Server 2003, XP, Vista, 7, 8, 10)

Other

Linux user for 8 years | Proficient with UNIX command line interface | Technical documentation writing | Homebuilt computers enthusiast

PUBLICATIONS

Central energy-to-peak filter design for uncertain linear systems

Control Conference (ASCC)
23 June 2013
http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=6606296&isnumber=6605987

This paper presents the central finite-dimensional energy-to-peak filter for linear systems that is optimal with respect to a modified Bolza-Meyer quadratic criterion including the first degree state-dependent term and the attenuation control term with the opposite sign. The obtained solution is based on reducing the original energy-to-peak filtering problem to the corresponding mean-module filtering problem, using the technique proposed in [1]. The paper first presents the central energy-to-peak filter for linear systems, based on the optimal mean-module filter from [2], assuming the standard filtering conditions of stabilizability, detectability, and noise orthonormality. Finally, to relax the standard conditions, the paper presents the generalized version of the designed energy-to-peak filter in the absence of the noise orthonormality. Numerical simulations are conducted to verify performance of the designed energy-to-peak filter for linear systems against the central suboptimal H∞ filter [3]. The simulation results show a definite advantage in the values of the noise-output energy-to-peak norm in favor of the designed filter.

Technical notes

Self-published
http://pedroivanlopez.com/tech-notes/

Technical documentation on topics such as programming, system administration, audio/video processing and production and security

LANGUAGES

Spanish	Native speaker
English	Full professional proficiency

INTERESTS

Software

Development | Design | Industry | Web/HTTP | Security

Open source

Open Collaboration Security Open Data

Rationality

Decision-making