https://github.com/lopezpdvn
http://pedroivanlopez.com/resume

PEDRO I. LOPEZ

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About

I'm a Software Development Engineer interested in large scale systems and the Web. I have 3.5 years of experience in software engineering and have been programming for over 12 years. My primary development experience is in back-end programming in Java, C#, JavaScript, and Python; writing agent/batch/job-oriented systems for financial systems, system administration for Windows and UNIX, hardware/computer engineering and robust control software. A lot of the software I have designed and implemented is publicly available on GitHub.

Education

- **Master of Information Engineering in Computer Science**, 2015, Autonomous University of Nuevo León. Overall Grade 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

- Bachelor in Mechatronics Engineering, 2012, Autonomous University of Nuevo León. Graduated with honors (*Mención Honorífica de Excelencia*), Overall Grade 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

Experience

Self-employment/Freelancing, Monterrey, Nuevo León, Mexico
Instructor. 2015-2016. Coached job applicants and students on computer science and software engineering topics.

- Designed customized 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
- Implemented and 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 and 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, Monterrey, Nuevo León, Mexico
Technical Writer. 2015-2016. Wrote technical documentation on topics such as programming, system administration, audio/video processing and production, and security.

- 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

Infosys Ltd, Monterrey, Nuevo León, Mexico
Systems Engineer, January 2013 to February 2015. 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

- Coded and tested new agents/batch-jobs and features 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 350 incidents, including code bugs, development of new features, customers with invalid data in production and outages
- On-call primary contact for 20 weeks
- Led 30 Request For Change procedures 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

Center for the Development of the Software Industry, Monterrey, Nuevo León, Mexico.
Software Engineer, October 2012 to January 2013. Tested and validated a financial web application and platform

- 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 UANL, Monterrey, Nuevo León, Mexico
Research Assistant (internship), August 2011 to February 2012. Research topics: control engineering, robust control, linear systems, filters.

- 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 UANL, Monterrey, Nuevo León, Mexico
Laboratory Assistant (internship), February 2012 to August 2012

- Supported students with Python, MATLAB and LabVIEW programming and electronics
- 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

Computer Skills	• **Languages**: Python, JavaScript, C#, Java, SQL, HTML, CSS, Bash/UNIX Shell Scripting, VB.NET, MATLAB, LabVIEW, XSLT, LaTeX • **Data/Databases**: Microsoft SQL Server, Oracle, MySQL, SQLite, JSON, YAML, XML • **Technologies**: .NET, Java, Node.js, xUnit, ASP.NET 4 & 5, ASP.NET MVC 5, Docker, Spring, Hibernate, ASP.NET Web Forms, Java EE, Jekyll, Sphinx documentation tools, leJOS • **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
Languages	• **English**: Full professional proficiency • **Spanish**: Native speaker
Projects	• **ASPNET5CO**: Advocacy and Community. Efforts to advocate the ASP.NET Core framework, http://pedroivanlopez.com/aspnet5co • **Data structures and algorithms in C#**: https://github.com/lopezpdvn/DataStructuresAlgorithmsCSharp • **mazerob**: Bluetooth-remote-control robot implemented with Java Virtual Machines on a PC and a Lego NXT Brick, http://pedroivanlopez.com/mazerob • **printer73x**: A computer numerical control system for printing binary images, http://pedroivanlopez.com/printer73x • **cerca**: A distance measurement system running on a personal computer and an 8-bit microcontroller http://pedroivanlopez.com/cerca • **pysyspol**: Cross-platform system policy for applications and environments with Python https://github.com/lopezpdvn/pysyspol • **syspol-js**: Cross-platform system policy for applications and environments with JavaScript https://github.com/lopezpdvn/syspol-js • **dotfiles**: Miscellaneous configuration files and directories https://github.com/lopezpdvn/dotfiles • **Software engineering problems in C#**: https://github.com/lopezpdvn/SoftwareEngineeringProblemsCSharp • **resources-viewer**: Browser based static app for viewing resources https://github.com/lopezpdvn/resources-viewer • **timeman**: Simple time management types, https://github.com/lopezpdvn/timeman • **syspol**: Cross-platform system policy for applications and environments https://github.com/lopezpdvn/syspol • **swebserv**: Java program that simulates Denial-of-service attacks on HTTP/web servers https://github.com/lopezpdvn/swebserv For other projects see my technical notes, as well as my Github and Gist profiles.

Publications	• 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].* • Technical notes. Self published, http://pedroivanlopez.com/tech-notes/ Technical documentation on topics such as programming, system administration, audio and video processing and production and security