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|  | <https://github.com/lopezpdvn><http://pedroivanlopez.com/resume> | | **Pedro I. Lopez** [http://pedroivanlopez.com](http://pedroivanlopez.com/) | +52 818 023 1545 [m@pedroivanlopez.com](mailto:m@pedroivanlopez.com) |  |
| **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#](https://github.com/lopezpdvn/DataStructuresAlgorithmsCSharp), [Software engineering problems in JavaScript](https://github.com/lopezpdvn/software-engineering-problems-javascript), [Software engineering problems in C#](https://github.com/lopezpdvn/SoftwareEngineeringProblemsCSharp), [pysweng: Software engineering problems in Python](https://github.com/lopezpdvn/pysweng) and [Data structures and algorithms in JavaScript](https://github.com/lopezpdvn/data-structures-algorithms-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*](http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=6606296&isnumber=6605987), 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](http://pedroivanlopez.com/tech-notes/), as well as my [Github](https://github.com/lopezpdvn) and [Gist](https://gist.github.com/lopezpdvn) 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 | | | |